Order SYNENTOGNATHI

Maxillary near or close to premaxillary, again solidly united though with distinct sutures. Articular bone of lower jaw with small supplemental bone. Lower pharyngeal bones completely united. Branchiostegals 9 to 15. Vertebrae numerous, 45 to 70, abdominal more numerous than caudal. Ribs begin on first vertebra. Scapula suspended to cranium by posttemporal bone, which is slender and forked. Air bladder large. Intestinal canal simple, without pyloric appendages. Lateral line low or along lower side of body, concurrent with ventral profile of body, of peculiar structure and often not quite reaching caudal. Fins without spines. No adipose fin. Ventrals abdominal, rays more than 5.

A large group of fishes, well represented in all tropical seas. According to Regan they comprise an isolated assemblage without evident relationship to any other fishes though showing certain affinities with the toothed minnows or cyprinodonts. In earlier taxonomic arrangements of fishes the Synentognathi marked the beginning of the series Physoclisti, characterized by the absence of a duct connecting the air bladder with the alimentary canal. In contrast were the more primitive groups of bony fishes or Physostomi, all with a persistent duct.

Analysis of Suborders

a^1. Mouth usually large; third upper pharyngeals moderately enlarged, separate, fourth usually present; scales very small----------Scombresocoidea.

a^2. Mouth small; third upper pharyngeals strongly enlarged, together forming somewhat convex ovoid plate; scales rather large----------Exocoetoidea.

Suborder SCOMBRESOCOIDEA

Mouth typically large, jaws usually extended and narrowed forward. Rami of mandible usually united by interlocking of row of inner extensions. Maxillaries firmly joined with premaxillaries. Third upper pharyngeals moderately enlarged, separate, fourth usually present. Lower pharyngeal triangular or long and narrow. Pharyngeal teeth usually villiform or granular, some of teeth of principal plates often compressed, tricuspid. Scales small.

Analysis of Families

a^1. No finlets.----------Belonidae.

a^2. Dorsal and anal with detached finlets.---Scombresocidae.

Family BELONIDAE

Body greatly elongate, very slender, compressed or not. Both jaws extended into beak, lower longer, still longer in young. Maxillaries grown fast to premaxillaries. Each jaw with band of small sharp teeth, besides series of longer wide set sharp conical teeth. Vertebrae 55 to 77, precaudal with strong projections to which ribs attached. Air bladder present. Ovary single. Scales very small, thin. Dorsal and anal far postmedian, rather long, opposite. No finlets.

Carnivorous surface fishes, in many ways syggestive in superficial manner to the gar pikes. Found in all warm seas, some entering fresh water. In habits they somewhat resemble pikes, though when disturbed, or so inclined, are able to swin along the surface of the water with great rapidity, some even leaping and skipping out short distances. In the tropics when thus leaping the large species are sometimes dangerous to fishermen. They have even been known to pierce the naked abdomens of savages.

In life all are with more or less green tints or colors, which penetrate to the bones and even the flesh. When cooked, however, the flesh becomes whitish and is well flavored. When available gars are valuable food fishes. Their sides are brilliant shining silvery or silvery white or they may have a silvery lateral band from the head to the base of the tail fin. Most of the gars are furnished with a dorsal lappet over the iris, serving to protect them from brilliant sunlight. The development of the beak is variable, sometimes only the lower jaw in young being prolonged, again the jaws may be subequal or they may even lateral mandibular flaps in the young. The tail rounded or truncate in the young becomes lunated or forked in some forms.

Gars swim at or near the surface offshore, in tidal currents, or in the open sea. In spite of their enormous jaws and terrible armament of needlelike teeth, gars can prey only on comparatively small fishes, since the gullet is too narrow to permit swallowing fish of any size. Silversides (Atherninidae), anchovies (Engraulidae), sardines (Clupeidae), young caesios, and other small slender fishes seem to comprise the bulk of their food, at least around the reefs of the Sulu and Celebes Seas. If a half stick of dynamite is fired near a wharf in the Sulu Archipelago large numbers of silversides are always killed or stunned. At once several large gars will appear like magic from the stream, where their greem backs harmonize perfectly with the color of the water, and in an incredible short time they will snap up all the floating silversides and other small disabled fishes.

Gars swim with an undulating motion of the body and are exceedingly active. When startled they move with astonishing speed and may leap from the water several times or may skip over the surface in gigantic leaps like a ricochetting flat stone, or may rise out of the water until only the tail or posterior part of the body is left in it, just as a modern speed boat travels, shooting forward with incredible swiftness and all but flying. It sometimes happens on such occasions that a whizzing gar strikes a person with its hard bill which penetrates like an arrow, inflicting dangerous wounds, horribly lacerating the abdomen, or causing death. A snapping gar may also inflict very severe wounds with its large needlelike teeth. (Herre).

Analysis of Genera

a^1. Strongylurinae. Gill rakers absent or vestigeal; enlarged teeth of both jaws strong spaced canines.

b^1. Lower pharyngeal elongate, narrow, dentigerous plate scarcely expanded posteriorly; second and third upper pharyngeals dentigerous, fourth usually distinct and dentigerous.

c^1. Body well compressed.

d^1. Beak comparatively stout, moderate.----------Strongylura.

d^2. Beak very elongate, slender.----------Rhaphiobelone.

b^2. Lower pharyngeal small, narrow, pointed or rounded at both ends; only 1 pair of dentigerous upper pharyngeals, the third; fresh waters of India and East Indies.---Xenentodon.

a^2. Beloninae. Gill rakers present; jaws comparatively slender; upper enlarged teeth moderate, lower small and close set; lower pharyngeal triangular, second and third upper dentigerous, fourth usually distinct and dentigerous.-----Belone.

Genus Strongylura Van Hasselt

Strongylura VAN HASSELT, Bull. Sci. Nat. Férrusac, sec. 2, vol. 2, p. 374, 1824. (Type Strongylura caudimaculata VAN HASSELT = Belone strongylura VAN HASSELT, virtually tautotypic.)

Tylosurus COCCO, Giorn. Sci. Lett. Sicil., vol. 42, no. 124, p. 18, 1833. (Type Tylosurus cantraini COCCO = Sphyraena acus Lacépède, monotypic.)

Stenocaulus OGILBY, Proc. Roy. Soc. Queensland, vol. 21, p. 91, 1908. (Type Belone kreffti GÜNTHER, orthotypic.)

Thalassosteus JORDAN, EVERMANN and TANAKA, Proc. Cal. Acad. Sci., ser. 4, no. 20, vol. 16, p. 651, Nov. 14, 1927. (Type, Belone appendiculatus KLUNZINGER, orthotypic.)

Busuanga HERRE, Science, vol. 71, p. 132, 1930. (Type, Tylosurus philippinus HERRE, orthotypic.)

Body very slender, cylindrical or little compressed. Head long. Both jaws extended as beak, lower somewhat longer, much longer in young and very young often resemble hemiramphids. Each jaw with band of small, sharp teeth, besides series of longer, wide set, sharp, conic, unequal teeth. No teeth on vomer or palatines. Gill openings wide. Gill rakers absent. Bones usually greenish. Scales small to very small, thin. Lateral line inferior, runs along lower side of belly, sometimes forming elevated keel on caudal peduncle. No finlets. Dorsal fin mostly elevated in front, somewhat or even considerably behind anal, all rays of both fins connected by membranes. Caudal short, unequally lunated or forked, truncate or rounded. Pectorals moderate. Ventrals small, latter inserted behind middle of body.

Rather large voracious fishes, largest reaching a meter and a half in length, in most all tropical seas, a few entering rivers. In these gars the changes with age are marked, as in the young the greatly prolonged lower jaw is always longer, though less so with age.

Herre says the larger species are much feared by fishermen, as when frightened they may skip along the surface of the water at terrific speed, hurtling through the air in great leaps and inflicting frightful injuries upon or even killing anyone unlucky enough to be in their way. They also damage small nets, through which they easily tear their way.

Three nomina nuda have been given for Queensland species by Saville-Kent:

Strongylura staigeri (Saville-Kent)

Belone staigeri SAVILLE-KENT, Great Barrier Reef, p. 370, 1895 (type locality: Queensland).

Tylosurus staigeri MCCULLOCH, Austral. Mus. Mem., vol. 5, pt. 1, p. 100, June 29, 1929 (reference).

Strongylura tyrannus (Saville-Kent).

Belone tyrannus SAVILLE-KENT, Great Barrier Reef, p. 370, 1895 (type locality: Queensland).

Tylosurus tyranus MCCULLOCH, Austral. Mus. Mem., vol. 5, pt. 1, p. 100, June 29, 1929 (reference).

Strongylura vorax (Saville-Kent).

Belone vorax SAVILLE-KENT, Great Barrier Reef, p. 370, 1895 (type locality: Queensland).

Tylosurus vorax MCCULLOCH, Austral. Mus. Mem., vol. 5, pt. 1, p. 100, June 29, 1929 (reference).

Analysis of Species

a[1]. End of mandible without terminal keel below.

b[1]. Strongylura. Caudal truncate, rounded behind with age, lateral line not forming keel on caudal peduncle.

c[1]. D. II, 10 to II, 13; A. II, 13 to II, 15.

d[1]. Scales 125; no caudal spot.----------urvillii.

d[2]. Scales 170; caudal with black basal spot.---------

----------strongylura.

c[2]. D. II, 14 to II, 18; A. II, 17 to II, 23.

e[1]. Body subcylindrical or compressed.

f[1]. Head 2½ to 2-7/10.----------incisa.

f[2]. Head 2-4/5 to 3¼.

g[1]. Scales 185 to 200.----------leiura.

g[2]. Scales 300.----------tahitiensis.

e[2]. Body strongly compressed.----------kreffti.

b[2]. Tylosurus. Caudal forked (emarginate or nearly truncate in young); lateral line forms keel on caudal peduncle.

h[1]. Last dorsal rays not elongated or black.

i[1]. Caudal peduncle wide as deep.

j[1]. D. II, 17 or II, 18; A. II, 18; eye 2-1/3 in postocular.---------groeneri.

j[2]. D. II, 18 or II, 19; A. II, 17 to II, 19; eye 3 in postocular,-------macleayana.

j[3]. D. II, 19; A. II, 22 to II, 24.

k[1]. Eye 2 in postocular.----------terebra.

k . Eye 3½ in postocular.----------ferox.

j[4]. D. II, 23 or II, 24; A. II, 20 or II, 21; eye 2 to 2¼ in postocular.

l[1]. Mandible tip little or not projecting.----------timucoides.

l[2]. Mandible tip protruded pad, its upper profile continuous with that of upper jaw profile-----

----------philippina.

i[2]. Caudal peduncle deeper than wide.

m[1]. D. II, 17; A. II, 21 to II, 24.-

----------anastomella.

m[2]. D. II, 19 to II, 21; A. II, 18 or II, 19.

n[1]. Eye 2 in postocular.---------

----------crocodila.

n[2]. Eye 2-3/5 to 2-4/5 in postocular.----------punctulata.

m[3]. D. II, 20; A. II, 21; eye 2 in interorbital.-----gavialoides.

m[4]. D. II, 22; A. II, 20; eye 1¼ in interorbital.--------auloceps.

h[2]. Last dorsal rays elongated, black.

a[2]. Thalassosteus. End of mandible with small-deep terminal keel below.----------appendiculata.

Depth 14 to 16$\frac{3}{4}$, body robust, largely cylindrical, caudal peduncle compressed; head 2-1/5 to 2-1/3, width 7-1/5 to 8-1/3. Snout 1-2/5 in head from snout tip; eye 11-1/8 to 13, 7-4/5 to 8-4/5 in snout, 1 to 1-1/6in interorbital; maxillary reaches 1/5 to 1/4 in eye, length to front point 2 to 2$\frac{3}{4}$ in head posteriorly; canines inclined little posteriorly; interorbital 10$\frac{3}{4}$ to 4, level, with moderate and rather deep median groove.

Scales 112 or 113 in lateral axial series to caudal base and 8 or 9 more on latter; 80 to 92 predorsal forward to occiput; 12 or 13 on postocular to hind preopercle edge; 10 above lateral line to dorsal origin. Scales with 52 to 86 basal parallel circuli, absent apically.

D. II, 11 or II, 12, first branched ray 5 to 5-1/5 in total head length; A. II, 14, first branched ray 4-1/5 to 4-3/5; least depth of caudal peduncle 1-1/8 to 1-1/5 in eye; caudal 3-4/5 to 4$\frac{1}{4}$ in total head, truncate behind; pectoral 4 to 4-1/8; ventral 6-1/3 to 7, reach 1$\frac{3}{4}$ to 2 to vent.

Back brown, also head above. Sides and lower surfaces paler to whitish, with silvery tinge. Fins all pale brownish, with dark neutral gray blotch at pectoral basally and more vivid inside fin. On membranes close to each fin ray and on fin ray itself median dusky area, often as blackish bordering line.

East Indies, Philippines, Vanicolo, Santa Cruz Island. Well figured by Bleeker and allied with Strongylura strongylura, though distinguished chiefly by its larger scales and the caudal fin without the conspicuous median basal black spot.

5167, 5168, 6114. Iloilo market, Panay. June 1, 1908. Length, 288 to 375 mm.

A 442. Manila market, Luzon. March 14, 1908. Length 321 mm.

Two examples. River at Pasacao, Luzon. March 4, 1909. Length 183 to 208 mm.

U.S.N.M. no. 57906. Zamboanga. Dr. E. Mearns. Length 168 to 175 mm. As Tylosurus leiuroides. Two examples.

U.S.N.M. no. 57949. Zamboanga. Zamboanga. Dr. E. Mearns. Length 72 to 98 mm. As Tylosurus leiuroides. Two examples.

Strongylura strongylura (Van Hasselt)

Belone strongylura VAN HASSELT, Algem. Konst - en Letterbode, vol. 1, p. 131, 1823 (type locality: Batavia, Java). - MARTENS, Preuss. Exped. Ost.-Asien, vol. 1, pp. 235, 325, 1876 (Singapore, Pontianak). - DAY, Fauna British India, Fishes, vol. 1, p. 421, 1889. - WEBER, Siboga Exped., vol. 57, Fische, p. 122, 1913 (Makassar).

Belone strongylurus GÜNTHER, Cat. Fishes Brit. Mus., vol. 6, p. 246, 1866 (China; Pinang; India). - DAY, Fishes of India, pt. 3, p. 512, pl. 118, fig. 6, 1877 (India; Burma; Calcutta). - GÜNTHER, Rep. Voy. Challenger, vol. 1, pt. 6, p. 50, 1880 (Somerset). - KÁROLI, Termesz. Füzetek, Budapest, vol. 5, p. 181, 1881 (Canton). - SAUVAGE, Bull. Soc. Philom. Paris, ser. 7, vol. 5, p. 107, 1881 (Swatow, China). - WEBER, Zool. Ergebn. Reise Nederland. Oost. Indië, vol. 3, p. 456, 1894 (Banka, Sumatra, Nias, Java, Madura, Celebes, Amboina). - ELERA, Cat. Fauna Filip., vol. 1, p. 573, 1895 (Luzon; Cavite; Santa Cruz). - DUNCKER, Mitteil. Natur. Mus. Hamburg, vol. 21, p. 169, 1903 (1904) (Klang, Kuala Lumpur, Jeram?, Singapore, Kuala Selangor, Kuala Langat). - VOLZ, Naturk. Tijds. Nederland. Indië, vol. 66, p. 177, 1907 (Siboga; Palembang). - DUNCKER, Mitteil. Natur. Mus. Hamburg, vol. 29, p. 257, 1911 (compiled). - REGAN, Trans. Zool. Soc. London, vol. 20, pt. 6, p. 276, 1914 (Mimika River, New Guinea).

Mastacembelus strongylurus BLEEKER, Versl. Meded. Akad. Wet. Amsterdam, ser. 2, vol. 2, p. 293, 1868 (Rio, Bintang); Atlas Ichth. Ind. Néerland., vol. 6, p. 45, pl. (11) 257, fig. 3, 1869-72 (Java; Madura; Sumatra; Nias; Pinang; Singapore; Bintang; Banka; Borneo; Celebes; Amboina; New Guinea); Nederland Tijdschr. Dierk., vol. 4, p. 149, 1873 (reference).

Tylosurus strongylura RUTTER, Proc. Acad. Nat. Sci. Philadelphia, 1897, p. 69 (Swatow). - WU, Contrib. Biol. Lab. Sci. Soc. China, vol. 5, no. 4, p. 61, fig. 50, 1929 (Amoy).

Tylosurus strongylurus SEALE, Philippine Journ. Sci., vol. 5, no. 4, p. 267, 1910 (Borneo). - REGAN, Ann. Mag. Nat. Hist., ser. 8, vol. 7, p. 322, 1911 (name). - WEBER and BEAUFORT, Fishes Indo-Austral. Archipel., vol. 4, p. 121, 1922 (Taluk and Bagan Api Api, Sumatra; Java Sea; Batavia; Sintang, Borneo; Makassar, Celebes). - HERRE, Philippine Journ. Sci., vol. 36, no. 2, p. 220, pl. 1, fig. 2, June, 1928 (Bulacan; Manila; Calabanga; Tacloban; Cagayan de Misamis; Davao; Sandakan, Borneo; Amoy, China).

Strongylura strongylura FOWLER, Proc. Acad. Nat. Sci. Philadelphia, 1919, p. 3 (Philippines). - FOWLER and BEAN, Proc. U. S. Nat. Mus., vol. 71, art. 10, p. 4, 1927 (Benkoelan, Sumatra). - FOWLER, Proc. Acad. Nat. Sci. Philadelphia, 1927, p. 261 (San Fernando; Orani; Philippines); Mem. Bishop Mus., vol. 10, p. 72, 1928 (compiled);- Hong Kong Naturalist, vol. 3, nos. 3-4, p. 263, fig. 10, Dec., 1932 (Philippines).

Strongylura caudimaculata VAN HASSELT, Bull. Sci. Nat. Férrusac, Zool., 1823, p. 374 (type locality: Java). - CHU, Biol. Bull. St. John's Univ., nol. 1, p. 86, Jan., 1931 (compiled).

Belone caudimacula CUVIER, Régne Animal, ed. 2, vol. 2, p. 285, 1829 (on Kuddera A Russell, Fishes of Coromandel, vol. 2, p. 61, pl. 176, 1803, Vizagapatam). - VALENCIENNES, Hist. Nat. Bombay, Alipey; Pondicherry; Calcutta; Poiss., vol. 18, p. 452, 1846 (Rangoon). - RICHARDSON, Ichth. China, Japan, p. 264, 1846 (China; Canton). - CANTOR, Journ. Asiatic Soc. Bengal, vol. 18, pt. 1, p. 1228, 1849 (1850) (Pinang, Malayan Peninsula). - BLEEKER, Verh. Batav. Genootsch. (Madura), vol. 22, p. 5, 1849 (Bangaallong, Kammal); Naturk. Tijdschr. Nederland Indië, vol. 1, p. 160 (Banka), p. 260 (Bandjermassing) 1850; vol. 2, p. 190 (Bandjermassing), p. 470 (Rio), 1851; vol. 3, p. 54 (Singapore), p. 409 (Pamangkat; Sampit; Bandjermassing); Verh. Batav. Genootsch. (Snock. Vissch.), vol. 24, p. 12 (Batavia, Samarang, Surabaja, Pasuruan), p. 27 (Singapore, Pinang), 1852; (Bengal. Hind.), vol. 25, pp. 8, 72, 1853 (compiled); Naturk. Tijdschr. Nederland Indië, vol. 5, p. 429, 1853 (Pontianak); vol. 8, p. 152, 1855 (Bandjermassing); vol. 11, p. 419, 1856 (Muntok, Banka); vol. 12, p. 217 (Nias), p. 26 (Tikoe), 1856; Act. Soc. Sci. Ind. Néerland., vol. 2, no. 7, p. 7, 1857 (Amboina); vol. 3, no. 6, p. 2, 1857-58 (Sinkawang, Borneo); vol. 3, no. 9, p. 6 (Siboga), p. 7 (Palembang) 1857-58; Nat. Tijds. Nederland. Indië, vol. 16, p. 26 (Tikoe), p. 434 (Sinkawang and Pamangkat, Borneo), 1858; Act. Soc. Sci. Ind. Néerland.,,vol. 5, no. 6, p. 4, 1858-59 (Palembang); vol. 5, no. 7, p. 2, 1858-59 (Sinkawang); vol. 8 (Achst. Sumat.), p. 55, 1859 (Siboga; Palembang); Naturk. Tijdschr. Nederland. Indië, vol. 21, p. 139, 1860 (Muntok, Banka); Versl. Meded. Akad. Wet. Amsterdam, vol. 12, p. 64, 1861 (Pinang). - MACLEAY, Proc. Linn. Soc. New South Wales, vol. 5, pt. 2, p. 177, 1881 (Port Darwin).

Belone caudimaculata VALENCIENNES, Hist. Nat. Poiss., vol. 18, 1846 (reference in table). - CANTOR, Madras Journ. Liter. Sci., 1851, p. 147. - DAY, Fishes of Malabar, p. 164, 1865; Proc. Zool. Soc. London, 1865, p. 369 (Cochin, Malabar). - GÜNTHER, Cat. Fishes Brit. Mus., vol. 6, p. 245, 1866 (Amboina; Port Essington).

Belone caudimaculata (KÁROLI, Termesz. Füzetek, vol. 5, p. 181, 1881 (Singapore). - MEYER, Anal. Soc. Espan. Hist. Nat. Madrid, vol. 14, p. 38, 1885 (Manila Bay; Cebu). - WEBER, Zool. Ergebn. Reise Nederland., Ost. Indië, vol. 3, p. 456, 1894 (Borneo). - ELERA, Cat. Fauna Filip., vol. 1, p. 573, 1895 (Luzon; Manila; Rio Pasig). - VOLZ, Zool. Jahrb. Syst., vol. 19, p. 393, 1903 (Sumatra); Nat. Tijdschr. Nederland., Indië, vol. 66, p. 177, 1907 (Siboga; Palembang).

Mastacembelus caudimacula BLEEKER, Nederland Tijdschr. Dierk., vol. 2, pp. 176, 194, 1865 (Siam; copied).

Tylosurus caudimaculatus JORDAN and RICHARDSON, Bull. Bur. Fisher., vol. 27, p. 242, 1907 (1908) (Iloilo); Mem. Carnegie Mus., vol. 4, p. 175, 1909 (Takao, Formosa). - SEALE, Philippine Journ. Sci., vol. 9, p. 60, 1914 (Hong Kong). - FOWLER, Copeia, no. 58, p. 62, June 18, 1918 (Philippines). - BORODIN, Bull. Vanderbilt Marine Mus., vol. 1, art. 2, p. 46, 1930 (Manila).

Belone saigonensis SAUVAGE, Bull. Soc. Philom. Paris, ser. 7, vol. 3, p. 204, 1878 (type locality: Saigon, Cochin; Me'Kong in fresh water).

Depth 15-1/3 to 16-1/5, body little compressed, caudal peduncle well compressed; head 2-1/3 to 2½, width 8-1/5 to 8½. Snout 1-2/5 to 1½ in head from snout tip; eye 11½ to 12, 8¼ to 9-1/5 in snout, slightly greater to 1-1/8 in interorbital; maxillary reaches ¼ in eye, length from front point 2-7/8 to 3 in head posteriorly; canines slightly inclined backward; interorbital 11-2/5 to 12½, level, with rather deep median groove.

Scales 124 to 143 in median lateral or axial series to caudal base; 85 to 103 predorsal forward to occiput; 14 or 15 postocular to hind preopercle ridge; 14 or 15 above lateral line to dorsal origin. Scales with 16 to 30 circuli, usually obsolete or absent apically.

D. II, 11 or II, 12, first branched ray 4¾ to 5 in total head; A. II, 14 to II, 12, first branched ray 4-1/8 to 4-3/5; least depth of caudal peduncle 1-1/6 to 1¼ in eye; caudal 3¾ to 4 in total head, truncate; pectoral 4½ to 5-1/8; ventral 6¾ to 7-2/3, reaches 2¼ to 2-2/5 to vent.

Brown on back and upper surface of head, lower and under surfaces paler. Usually silvery lateral to axial band, most evident posteriorly and often defined above by dark gray line. Blue-black round spot about size of pupil at caudal base medially. Fins otherwise all pale brownish. Iris silvery white.

India, Burma, Malaya, East Indies, Siam, Philippines, China, Formosa, North Australia, Queensland.

Belone saigonensis Sauvage seems to be this species, with the following:

Head 2-2/3. Eye 3½ in postorbital, equals interorbital; 2/3 of maxillary below preorbital; jaws equal; teeth pointed, strong, none on palate or tongue; supraocular region striate.

Head above scaleless, with deep groove. Scales truncate, caducous.

D. 13, inserted before fourth anal ray, reaches behind anal; A. 15, rays higher than dorsal; free part of tail compressed, much deeper than wide; P. 11, little less than postorbital; V. 6, inserted midway between preopercle and caudal base.

Black spot at caudal base. Yellowish longitudinal band on flanks. Length 400 mm.

21250. Cotabato, below mouth of Mindanao River. May 20, 1908. Length 142 mm.

One example. Iloilo market. June 1, 1908. Length 93 mm. This small example shows the black caudal spot also the caudal fin subterminally above blackish and below or medially largely dark brown.

6127. Iloilo market above river. June 2, 1908. Length 278 to 288 mm. Two examples.

17547. Sorsogon market. March 12, 1909. Length 237 mm.

5011, 20393. Sandakan Bay, Borneo, Dutch East Indies. March 2, 1908. Length 193 to 290 mm.

5307 to 5309. Sandakan Bay. March 21, 1908. Length 225 to 235 mm.

5287. Sandakan Bay. March 31, 1908. Length 190 mm.

A. N. S. P., nos. 49289 to 49292. Philippines. Commercial Museum of Philadelphia.

Strongylura incisa (Valenciennes)

Belone incisa VALENCIENNES, Hist. Nat. Poiss., vol. 18, p. 451, 1846 (type locality: Grand Ocean (indo-Pacific)). - GÜNTHER, Cat. Fishes Brit. Mus., vol. 6, p. 235, 1866 (copied). - WEBER, Siboga Exped., vol. 57, Fische, p. 123, 1913 (Biaru Island). - DÜNCKER and MOHR, Mitt. Zool. Mus. Hamburg, vol. 42, p. 126, 1926 (Kewieng Nusa, New Mecklenburg).

Tylosurus incisus WEBER and BEAUFORT, Fishes Indo-Austral. Archipel., vol. 4, p. 125, 1922 (Batavia; Macassar; Celebes; Biaru). - HERRE, Philippine Journ. Sci., vol. 36, no. 2, p. 223, June, 1928 (Polillo, Iba, Estancia, Bantayan, Tandubas, Bato Bato; Sitanki).

Strongylura incisus FOWLER, Mem. Bishop Mus., vol. 10, p. 73, 1928 (compiled); vol. 11, no. 5, p. 319, 1931 (compiled).

Belone leiuroides BLEEKER, Naturk. Tijds. Nederland. Indië, vol. 1, p. (478) 479, 1850 (type locality: Billiton); vol. 3, p. 54, 1852 (Singapore); Verh. Batav. Genootsch. (Snoek. Vissch.), vol. 24, p. 25, 1852 (Blitong, Billiton; Singapore); Naturk. Tijds. Nederland. Indië, vol. 6, p. 90, 1854 (Banda, Neira).

Belone liuroides GÜNTHER, Cat. Fishes Brit. Mus., vol. 6, p. 243, 1866 (type); Rep. Voy. Challenger, vol. 1, pt. 6, p. 57, 1880 (Nares Harbor, Admiralty Islands). - SCHMELTZ, Cat. Mus. Godeffroy, no. 8, p. 7, 1881 (Ponapé); no. 9, p. 37, 1884 (Ponapé). - GÜNTHER, Journ. Mus. Godeffroy, vol. 8, pt. 16, p.352, 1909 (Admiralty, Pelau, Ponapé, Ruk Islands).

Belone linroides KAROLI, Termesz. Füzetek, vol. 5, p. 181, 1881 (Singapore). (Error.)

Belone (Mastacembelus) liuroides STEINDACHNER, Sitz. Ber. Akad. Wiss. Wien, Math.-Natur. Kl., vol. 60, pt. 1, p. 570, 1870 (Singapore).

Mastacembelus leiuroides BLEEKER, Nederland. Tijdschr. Dierk. vol. 1, p. 272, 1863 (Atapupu, Timor); Atlas Ichth. Ind. Néerland., vol. 6, p. 50, pl. (9) 255, fig. 1, 1869-71 (Java, Billiton, Singapore, Banda, Timor).

Tylosurus leiuroides FOWLER, Proc. Acad. Nat. Sci. Philadelphia, p. 493, 1905 (Baram region of Sarawak). - JORDAN and SEALE, Bull. Bur. Fisher., vol. 25, p. 206, 1905 (1906) (Apia, Samoa). - EVERMANN and SEALE, Bull. Bur. Fisher., vol. 26, p. 58, 1906 (1907) (Bacon). - FOWLER, Copeia, no. 58, p. 62, June 18, 1918 (Philippines).

Strongylura leiuroides FOWLER, Proc. Acad. Nat. Sci. Philadelphia, 1919, p. 5 (Philippines).

?Belone brachyrhynchos BLEEKER, Naturk. Tijds. Nederland Indië, vol. 6, p. (51) 61, 1854 (type locality: Singangole, Habmaheira).

Mastacembelus brachyrhynchus BLEEKER, Nederl. Tijdschr. Dierk., vol. 3, p. 232, 1866 (type); Atlas Ichth. Ind. Néerland., vol. 6, p. 49, pl. (9) 255, fig. 2, 1866-72 (type).

?Belone robusta GÜNTHER, Cat. Fishes Brit. Mus., vol. 6, p. 242, 1866 (type locality: Red Sea; Egypt).

Belone robustus KLUNZINGER, Verh. zool. bot. Ges. Wien, vol. 21, p. 579, 1871, (Red Sea).

Tylosurus robustus REGAN, Ann. Mag. Nat. Hist., ser. 8, vol. 7, p. 332, 1911 (name).

Belone strongylura (not VAN HASSELT) BEAN and WEED, Proc. U. S. Nat. Mus., vol. 42, p. 592, 1912 (two from Batavia).

Tylosurus leuirus (not BLEEKER) HERRE, Philippine Journ. Sci., vol. 36, no. 2, pl. 2, 1928.

Depth 17¾ to 18-1/5, compressed, tail little more so; head 2¾ to 2-7/8, width 7-4/5 to 8. Snout 1-2/5 to 1½ in head; eye 11¼ to 11-4/5, 7-4/5 to 8-2/5 in snout, 1-1/5 to 1-1/3 in interorbital, 2-4/5 to 3 in postorbital; maxillary reaches ¼ to 1/3 in eye or to front pupil edge; maxillary point to eye 2-1/3 to 2½ in rest of head; canines slightly inclined backward; interorbital 10¼ to 10½ to snout tip, level, with broad median depression.

Scales 185 to 190 in lateral axial series to caudal base; 117 to 120 predorsal forward to occiput; 11 above to dorsal origin. Scales with 25 or 26 & 24 to 27 vertical circuli (striae) each side.

D. II, 17 or II, 18, first branched ray 4¼ to 6 in head to snout tip; A. II, 23 or II, 24, first branched ray 3-4/5 to 4; least depth of caudal peduncle 1-1/3 to 1-2/5 in eye; caudal 3-7/8 to 4 in head to snout tip, truncate, corner rounded; pectoral 3-4/5 to 4¼; ventral 5-4/5 to 6¼, reaches 1-7/8 to 2 to vent.

Back brownish, with grayish (silvery) axial lateral streak. Under surface of body whitish. Iris gray white. Fins brownish, lower ones whitish and no dark caudal spot basally. Pectoral tips blackish.

Singapore, East Indies, Philippines, Polynesia, Melanesia, Micronesia. This species is characterized by its rather large scales and deep occipital depression, also its long falcate dorsal and anal lobes similar to those of Strongylura crocodila. From that species it differs in its more advanced ventrals, which extend two times to vent and its caudal only shallowly concave behind. From Strongylura leiura it differs chiefly in the larger head, largely due to the very attenuated and slender beak. The head is thus contained about $2\frac{1}{4}$ to 2-3/5 times to caudal base, while in S. leiura the head is nearly 3 to 3-1/5.

Following Barnard's suggestion it seems to me that Belone robusta is most closely related to if not identical with the present species. Günther's types were 745 to 770 mm. long with forked caudal fins.

5784. Baganga Bay, Mindanao. May 13, 1908. Length 297 mm.

5642, 5644, 5645. Busin Harbor, Burias Island. April 23, 1908. Length 367 to 466 mm.

One example. Canmahala Bay, Ragay Gulf, Luzon. March 11, 1909. Length 353 mm. Head 2-2/5.

5362. Cebu market. April 5, 1908. Length 405 mm.

5739, 5742, 5745. La Generale Island. Capunuypugan Point, Mindanao. May 9, 1908. Length 416 to 465 mm.

5581. San Miguel Harbor, Ticao Island. April 21, 1908. Length 528 mm.

U.S.N.M. no. 52364. Apia, Samoa. Bureau of Fisheries (04763). Length 598 to 758 mm. Two examples.

U.S.N.M. no. 56036.

Bureau of Fisheries (3519). Length 278 mm.

U.S.N.M. no. 72573. Batavia, Java. Bryant and Palmer. Length 228 to 241 mm. Two examples. As Belone strongylura.

A.N.S.P., no. 49288. Philippines Commerical Museum of Philadelphia.

Strongylura leiura (Bleeker)

Belone leiurus BLEEKER, Naturk. Tijds. Nederland Indië, vol. 1, p. 94, 1850 (1851) (type locality: Batavia, Java); Verh. Batav. Genootsch. (Snoek. Viss.), vol. 24, p. 13, 1852 (Batavia); Naturk. Tijds. Nederland Indië, vol. 6, p. 518, 1854 (Oelakan, west Sumatra); vol. 7, p. 314, 1854 (Bantem); vol. 8, p. 393, 1855 (Amboina); vol. 10, p. 348, 1856 (Rio, Bintang); vol. 13, p. 385 (Batjan), p. 480 (Prigi, Java), 1857; Act. Soc. Sci. Ind. Néerland., vol. 3, no. 9, p. 3, 1857-58 (Padang); Naturk. Tijds. Nederland Indië, vol. 17, p. 143, 1858-59 (Boleling, Bali); Act. Soc. Sci. Ind. Néerland., vol. 8 (Sumatra), p. 12, 1859 (Benculen). - KNER, Reise Novara, Fische, p. 321, 1865 (Nicobars, Ceylon, Madras). - DAY, Fishes of India, pt. 3, p. 511, 1877. --KÁROLI, Termesz. Füzetek, vol. 5, p. 182, 1881 (Singapore).

Belone lirus GÜNTHER, Cat. Fishes Brit. Mus., vol. 6, p. 250, 1866 (type).-

Belone liura DAY, Fauna British India, Fishes, vol. 1, p. 420, 1889.

Belone liurus VOLZ, Naturk. Tijds. Nederland Indië, vol. 66, p. 177, 1907 (Priaman, Ulakan, Padang, Benkulen).

Mastacembelus leiurus BLEEKER, Versl. Meded. Akad. Wet. Amsterdam, ser. 2, vol. 2, p. 294,1868 (Rio, Bintang); ser. 2, vol. 7, p. 36, 1873 (Aru Islands); Atlas Ichth. Ind. Néerland, vol. 6, p. 46, pl. (11) 257, fig. 2, 1869-72 (Java, Bali, Sumatra, Bintang, Batjan, Amboina).

Tylosurus leiurus JORDAN and EVERMANN, Proc. U. S. Nat. Mus., vol. 25, p. 329, 1903 (Formosa). - FOWLER, Journ. Acad. Nat. Sci. Philadelphia, ser. 2, vol. 12, p. 501, 1904 (Padang) - JORDAN and SEALE, Bull. Bur. Fisher., vol. 26, p. 8, 1906 (1907) (Cavite). - SEALE and BEAN, Proc. U.S. Nat. Mus., vol. 33, p. 240, 1907 (Zamboanga). - JORDAN and RICHARDSON, Bull. Bur. Fisher., vol. 27, p. 243, 1907 (1908) (Aparri); Mem. Carnegie Mus., vol.4, p. 175, 1909 (compiled). - WEBER and BEAUFORT, Fishes Indo-Austral. Archipel., vol. 4, p. 124 (Pulu Weh; Nias; Batavia, Krawang and Semarang, Java; Flores; Ambon). - HERRE, Philippine Journ. Sci., vol. 36, no. 2, p. 225, (not pl. 2) June, 1928 (Santa Maria, Manila; Hoihow, Hainan).

Strongylura leiura FOWLER, Proc. Acad. Nat. Sci. Philadelphia, 1919, p. 5 (Padang); 1927, p. 261 (Philippines); Mem. Bishop Mus., vol. 10, p. 72, 1928 (Guam; Ebon).

?Belone tenuirostris BLYTH, Journ. Asiatic Soc. Bengal, vol. 29, p. 287, 1859 (1860) (type locality: Sitang River).

Mastacembelus mastomella (not VALENCIENNES) BLEEKER, Nederland Tijds. Dierk. vol. 3, p. 24, 1866.

Tylosurus annulatus (not VALENCIENNES) SEALE, Occas. Pap. Bishop Mus., vol. 1, no. 3, p. 64, 1900 (1901) (Guam).

Strongylura leiuroides (not BLEEKER) FOWLER, Copeia, no. 58, p. 62, June 18, 1918 (part).

Depth 16¾ to 18-2/3, compressed, caudal peduncle usually deeper than wide; head 3 to 3¼, width 9 to 9½. Snout 1-2/5 to 1½ in head; eye 11½ to 12, 7-1/3 to 8-1/5 in snout, 1-1/8 to 1-1/5 in interorbital; maxillary reaches ¼ in eye, length to maxillary point 2-2/5 to 3-2/3 rest of head; canines slightly inclined posteriorly; interorbital 10 to 10¼ in head to snout tip, level, with broad deep median depression.

Scales 180 to 190 in lateral axial series to caudal base; 170 to 176 predorsal forward to occiput; 14 above lateral line to dorsal origin; 12 to 14 rows on postocular to vertical preopercle ridge. Scales 24 to 28 circuli, obsolete apically.

D. II, 17 or II, 18, first branched ray 5-1/3 to 5½ in head to snout tip; A. II, 21 or II, 22, first branched ray 3-3/5 to 3-7/8; least depth of caudal peduncle 1-1/8 to 1¼ in eye; caudal 2-4/5 to 3½ in head to snout tip, hind edge little concave convex; pectoral 3-2/5 to 4; ventral 5 to 5-1/3, reach 2 to 2-1/5 to vent.

Brown, paler to silvery white below. Well defined silvery lateral band wide as pupil. Iris silvery white. Vertical fins brownish, dorsal and caudal grayish terminally. Other fins whitish. Pectoral dusky to blackish terminally.

India, Ceylon, Nicobars, Malaya, East Indies, Philippines, Hainan, Formosa, Micronesia.

4527. Manila market. December 18, 1907. Length 313 mm.

D. 5597. Zamboanga Light N. 31°W., 0.1 mile (lat. 6°54' N., long. 122°4'30" E.). September 30, 1909. Length 343 mm.

19925. Sandakan Anchorage, Borneo, Dutch East Indies. Electric light. March 1-8, 1909. Length 331 mm.

U.S.N.M. no. 86533. Pondicherry. E. Deschamp. Length 347 to 367 mm. Two examples.

A.N.S.P., no. 27455. Padang, Sumatra. A. C. Harrison and H. L. Hiller. Length 305 mm. (Beak broken). In arrack with back and head above dark greenish olive (later faded dull brown). Sides and below, also iris, silvery white. Fins pale. Dorsal and caudal dusted with pale dusky. Dark brown streak from occiput to near dorsal and on each side of body from shoulder leaden band to caudal base medially.

Strongylura tahitiensis Fowler and Bean

Strongylura tahitiensis FOWLER and BEAN, Proc. U. S. Nat. Mus., vol. 63, p. 10, 1923 (type locality: Tahiti); Mem. Bishop Mus., vol. 10, p. 73, 1928 (compiled); vol. 11, no. 5, p. 319, 1931 (compiled).

?Belone depressa (not POEY) SCHMELTZ, Cat. Mus. Godeffroy, no. 7, p. 57, 1879 (Yap). -- PÖHL, Cat. Mus. Godeffroy, no. 9, p. 37, 1884 (Yap). --BOULENGER, Ann. Mag. Nat. Hist., ser. 6, vol. 20, p. 374, 1897 (Rotuma).

?Tylosurus platurus (not BENNETT) WAITE, Rec. Australian Mus., vol. 5, p. 3, 1903 (Paanopa, Ocean Island, Gilbert Group).

Depth 17, body partly cylindrical, caudal peduncle deeper than wide; head 3¼, width 7-1/5. Snout 1-3/5 in rest of head; eye 11-1/5 in head from snout tip, 7-1/5 in snout, 1-1/8 in interorbital; maxillary reaches ¼ in eye, length to anterior point 2-7/8 in rest of head posteriorly; canines slightly inclined posteriorly; interorbital 9½ in head from snout tip, level, with long wide depression.

Scales 300 in median or lateral axial series to caudal base; 206 predorsal forward to occiput; 15 above lateral line to dorsal origin; 19 on postocular to hind preopercle edge. Scales with 38 to 42 parallel vertical striae, more or less complete.

D. II, 14, I, first branched ray 4-4/5 in total head length; A. II, 17, I, first branched ray 5-1/8; least depth of caudal peduncle 1-2/5 in eye; caudal 4 in total head length, hind edge concave?; pectoral 4-1/5; ventral 6-3/5, reaches 2-7/8 to vent.

Back and top of head brown, sides and lower surfaces pale to whitish, evidently silvery white when fresh. Obscure silvery streak, not wider than pupil, from shoulder till below dorsal, where expanded 2/3 vertical eye diameter in width. Fins all brownish.

Micronesia (Yap and Panopa) and Polynesia (Ellice and Society Islands). Near Strongylura incisa, though with some very diverse distinctions as the fewer (14) branched dorsal rays, increased lateral scales (300) in lateral series. In the character of the wide depression on the top of the head, with the somewhat convex areas on each side, it agrees largely with S. incisa.

U.S.N.M. no. 83424, Type. Tahiti. Wilkes Exploring Expedition. Length 640 mm. (Beak and caudal tips damaged). In the original description head erroneously given as 5-1/3.

Strongylura krefftii (Günther)

Belone krefftii GÜNTHER, Cat. Fishes Brit. Mus., vol. 6, p. 250, 1866 (type locality: Australia). -- MACLEAY, Proc. Linn. Soc. New South Wales, vol. 5, pt. 2, p. 178, 1881 (rivers of north Queensland). -- REGAN, Trans. Zool. Soc. London, vol. 20, pt. 6, p. 276, 1914 (Mimika River, New Guinea).

Belone kreffti SAVILLE KENT, Great Barrier Reef, pp. 299, 1893 (Fitzroy near Rockhampton). -- WEBER, Nova Guinea, vol. 9, pt. 4, p. 553, 1913 (Lorentz River).

Tylosurus krefftii MCCULLOCH, Mem. Austral. Mus., no. 5, pt. 2, p. 29, 1919 (reference).

Tylosurus kreffti WEBER and BEAUFORT, Fishes Indo-Austral. Archipel., vol. 4, p. 123, 1922 (Lorentz River).

?Belone cancila (not BUCHANAN-HAMILTON) MACLEAY, Proc. Linn. Soc. New South Wales, vol. 7, p. 592, 1882 (New Guinea).

Xenentodon cancila WEBER and BEAUFORT, Fishes Indo-Austral. Archipel., vol. 4, p. 134, 1922 (note on MACLEAY'S record).

Depth not much less than pectoral length, body strongly compressed; free portion of tail strongly compressed, much deeper than broad; head 2-2/5. Eye equals interorbital, 3 in postorbital; base of premaxillaries much depressed; maxillaries 2/3 hidden by preorbital; teeth rather feeble, wide set and tongue smooth; superciliary region slightly striated.

Scales thin, small. Scaly groove of moderate width runs along middle of upper surface of head.

D. 17, origin opposite anal origin, middle and hinder rays subequal, short, last ending well before caudal base; A. 19, like dorsal only front rays longer; caudal slightly emarginate; P. 13, somewhat less than distance of opercular margin from orbit; ventral midway between preopercle and caudal.

Upper parts blackish, sides and belly silvery white, two colors separated by narrow greenish streak.

Length 355 mm. (Günther).

Queensland, New Guinea.

Strongylura groeneri (Klunzinger)

Belone groeneri KLUNZINGER, Sitzs. Ber. Akad. Wiss. Wien, math.-naturw. Kl., vol. 80, pt. 1, p. 414, 1879 (type locality: Port Darwin).

Tylosurus groeneri MCCULLOCH, Austral. Mus. Mem., no. 5, pt. 1, p. 100, June 29, 1929 (reference).

Depth 1¼ in pectoral fin; head 3-1/6. Eye 9½ in head, 2-1/3 in postorbital; tongue rough; interorbital ½ in postocular; head with shallow but distinct groove.

D. 19 or 20; A. 20. Length 600 mm.

(Klunzinger.)

North Australia. Klunzinger also gives the following comparisons. Like Belone robusta Günther with weak keel to tail, broad as deep, lower dorsal and anal posterior rays, only under edge of upper jaw visible, small adherent scales, forked caudal and similarly placed ventral. Belone choram has hind dorsal and anal rays somewhat longer,--also with different ray lengths. Belone liuroides has larger scales, longer head, color as usual, dorsal and pectoral somewhat dark. Belone gavialoides is little known though without lateral caudal keel.

Strongylura macleayana (Ogilby)

Belone macleayana OGILBY, Cat. Fishes New South Wales, p. 53, 1886 (on Macleay); Edible Fishes of New South Wales, p. 170, pl. 41, 1893.

Tylosurus macleayana STEAD, Fishes of Australia, p. 64, 1906 (New South Wales). -- ROUGHLEY, Fishes of Australia, p. 35, 1916 (New South Wales).

Tylosurus macleayanus MCCULLOCH, Austral. Mus. Mem.,no. 5, pt. 1, pl. 100, June 29, 1929 (compiled).

Belone gracilis (not LOWE 1839, SCHLEGEL 1846) MACLEAY, Proc. Linn. Soc. New South Wales, vol. 6, pt. 2, p. 243, Sept. 12, 1881 (type locality: Port Jackson).

Tylosurus impotens OGILBY, Proc. Roy. Soc. Queensland, vol. 21, p. 89, 1908 (type locality: Moreton Bay, Queensland).

Depth 16$\frac{3}{4}$; head 3-2/5. Snout 1-3/5 in head from snout tip; eye 11-1/3, 7$\frac{1}{2}$ in snout; maxillary reaches 2/3 of eye; jaws with outer band of fine teeth and inner series of moderately stout conic ones; shallow median groove from occiput to upper jaw; occiput moderately striated, striae diverging from pair of lateral centers; posterior half of occiput deeply grooved laterally.

Scales small, thin, deciduous; cheeks and front half of cephalic groove scaly.

D. 20 or 21, first branched ray 4-1/5 in total head length; A. 19 to 21, first branched ray 3-1/3; caudal 3-7/8, rounded behind; caudal peduncle deep as wide, least depth little less than eye, keel obsolete or absent; pectoral 3-1/5, greater than postorbital; ventral 5-1/8 in total head, reaches 2-2/5 to anal.

Dark green above, silvery below. Snout blackish. Dorsal and caudal yellowish green, more or less distinctly tipped with black. Elongate anal rays and ventrals pale yellow, latter more or less clouded.

(Ogilby.)

New South Wales, Queensland. Though figured with rounded caudal the description says emarginate with the lower lobe produced. Tylosurus impotens Ogilby is evidently the same species and is said to reach 800 mm.

Strongylura terebra (Whitley)

Tylosurus terebra WHITLEY, Records Austral. Mus., vol. 16, pt. 1, p. 8, pl. 1, fig. 6, Oct. 7, 1927 (type locality: Michaelmas Cay, North Queensland).

Depth 22-2/5; head 2½. Snout 1-2/5 in head from snout tip; eye 12-1/5, 9 in snout, equals interorbital, 2 in postorbital; maxillary concealed below preorbital; teeth with many subvertical canines, little inclined back in lower jaw; top of head with series of bony radiating ridges converging into vertex behind each eye and radiating ridges over opercle. No gill rakers.

Scales cycloid. Interorbital scaly where sunken between ridges. Lateral line low, ends just behind anal fin, branch ascending to each pectoral base.

D. II, 19, first branched ray 6-7/8 in total head; A. II, 22, first branched ray 4-7/8; caudal peduncle depressed, keel each side, deeper than broad anteriorly, least depth 2/5 of eye; caudal emarginate, lower lobe little longer, length $5\frac{3}{4}$ in total head; pectoral 4-1/8, rays I, 11; ventral $7\frac{3}{4}$ in total head, reaches 3 to anal origin.

In life sea green, with intense silvery iridescence, especially below. On back 3 gray longitudinal lines, middle one thickest. Purplish iridescence below preorbital and in green on top of head when fish turned in light. Fins greenish. Caudal with indefinite dusky area on terminal half of upper lobe. Bluish line along sides, bright silver in certain lights. Pectoral axil dark green. Length 243 mm.

(Whitley.)

Queensland.

Strongylura ferox (Günther)

Belone ferox GÜNTHER, Cat. Fishes Brit. Mus., vol. 6, p. 242, 1866 (type locality: New South Wales).-- CASTELNAU, Proc. Linn. Soc. New South Wales, vol. 2, p. 239, 1877 (Queensland); vol. 3, p. (355) 394, 1878 (Port Jackson). -- MACLEAY, Proc. Linn. Soc. New South Wales, vol. 5, pt. 2, p. 176, 1881 (Port Jackson). -- OGILBY, Edible Fish. New South Wales, p. 168, 1893. -- WOODS, Fisher. New South Wales, p. 83, pl. 36.

Tylosurus ferox STEAD, Fishes of Australia, p. 64, fig. 24, 1906 (New South Wales; Western Australia). -- ROUGHLEY, Fishes of Australia, p. 33, pl. 6, 1916 (New South Wales, Queensland, Western Australia). -- MCCULLOCH, Australian Mus. Mem., no. 5, pt. 1, p. 101, June 29, 1929 (North Australia, New South Wales, Queensland, Western Australia, Victoria).

Body compressed, depth less than pectoral length; head less than 3. Eye 2/3 of interorbital, 2/7 of postorbital; bases of premaxillaries depressed; only basal half of maxillaries hidden by preorbital; jaws and teeth strong, none on palate or tongue; head above with broad median groove, tapering behind and widening in front; superciliary region striated.

Scales thin, rather small, adherent.

D. 21, middle and hind rays short, subequal, last ending well before caudal root; A. 26, like dorsal; caudal truncate; free portion of tail not compressed, subtrihedral, with back of tail broad and depressed; pectoral longer than opercular edge from orbit; ventral nearly midway between front eye edge and caudal base. Length 775 mm. (Günther.)

Western Australia, North Australia, Queensland, New South Wales and Victoria.

Strongylura timucoides (Van Hasselt).

Belone timucoides VAN HASSELT, Algemein. Konst- en Letterbode, no. 35, 1823 (on Wahlah Kuddera RUSSEL, Fishes of Coromandel, vol. 2, p. 60, pl. 175, 1803, type locality: Vizagapatam); Bull. Sci. Nat. Geol. Férussac, vol. 2, p. 374, 1824 (reference).

Esox belone (not LINNAEUS) FORSKÅL, Descript. Animal., pp. XIII, 67, 1775 (Red Sea).

Belone coromandelica KUHL and VAN HASSELT, Algem. Konst- en Letterbode, vol. 1, p. 130, 1823 (type locality: Coromandel) (name only).

Tylosurus coromandelica JORDAN and STARKS, Proc. U. S. Nat. Mus., vol. 26, p. 530, 1903 (Tsuruga; Yokohama). -- JORDAN and RICHARDSON, Mem. Carnegie Mus., vol. 4, p. 175, 1909 (Takao Formosa).

Strongylura coromandelica FOWLER, Proc. Acad. Nat. Sci. Philadelphia, p. 5, 1919 (Padang).

Belone choram RÜPPELL, Nene Wirbelth; Fische, p. 72, 1835 (type locality; Red Sea). -- GÜNTHER, Cat. Fishes Brit. Mus., vol. 6, p. 239 (Zanzibar; Mozambique), p. 357 (Cameroon), 1866. -- KLUNZINGER, Verh. zool. bot. Ges. Wien, vol. 21, p. 578, 1871 (Kosier, Red Sea). -- SCHMELTZ, Cat. Mus. Godeffroy, no. 5, p. 35, 1874 (Samoa). -- PETERS, Monatsb. Adad. Wiss. Berlin, 1876, p. 848 (Amboina; Bougainville Island. -- DAY, Fishes of India, pt. 3, p. 510, pl. 118, fig. 4, 1877. -- KOSSMAN, Zool. Anzeiger, vol. 2, p. 21, 1879 (Red Sea). -- BOULENGER, Proc. Zool. Soc. London, 1887, p. 666 (Muscat). -- DAY, Fauna British India, Fishes, vol. 1, p. 419, 1889. --SAUVAGE, Hist. Nat. Madagascar, Poiss., 1891, p. 526 (name). --TILLIER, Mém. Soc. Zool. France, vol. 15, p. 292, 1902 (Suez Canal at Red Sea). -- DUNCKER, Mitt. Naturhist. Mus. Hamburg, vol. 21, p. 169, 1903 (1904) (Singapore). -- GÜNTHER, Journ. Mus. Godeffroy, vol. 8, pt. 16, p. 351, 1909 (Duke of York Island).

Mastacembelus choram BLEEKER, Atlas Ichth. Ind. Néerland., vol. 6, pl. (10) 256, fig. 2, 1869-72.

Tylosurus choram SEALE, Occas. Pap. Bishop Mus., vol. 4, no. 1, p. 12, 1906 (Tahiti). -- GILCHRIST and THOMPSON, Ann. South African Mus., vol. 6, p. 200, 1908-11 (Natal); Ann. Durban Mus., vol. 1, pt. 4, p. 309, 1917 (compiled).

Strongylura choram FOWLER, Mem. Bishop Mus., vol. 10, p. 73, 1928 (Tahiti); Proc. Acad. Nat. Sci. Philadelphia, 1923, p. 37 (Madagascar).

Belone melanotus BLEEKER, Naturk. Tijds. Nederland. Indië, vol. 1, p. 94, 1850 (1851) (type locality: Batavia, Java); vol. 3, pp. 54, 59, 1852 (Singapore); Verh. Batav. Gennotsch. (Snoek. Vissch.) vol. 24, p. 14 (Batavia), p. 27 (Singapore), 1852; Act. Soc. Sci. Ind. Néerland., vol. 1, no. 3, p. 10, 1856 (Macassar). -- GÜNTHER, Cat. Fishes Brit. Mus., vol. 6, p. 238, 1866 (East Indies). -- ALLEYNE and MACLEAY, Proc. Linn. Soc. New South Wales, vol. 1, p. 348, 1876 (Cape York). -- PETERS, Monatsb. Akad. Wiss. Berlin, p. 848, 1876 (New Britain). -- JOUAN, Mém. Soc. Sci. Nat. Cherbourg, vol. 21, p. 334, 1877-78 (on JOUAN, op. cit., vol. 8, p. 303, 1861, Kanala, New Caledonia). -- MACLEAY, Proc. Linn. Soc. New South Wales, vol. 5, pt. 2, p. 175, 1881 (Cape York). -- MEYER, Anal. Soc. Espan. Hist. Nat. Madrid, vol. 14, p. 38, 1885 (Cebu). -- ELERA, Cat. Fauna Filip., vol. 1, p. 573, 1895 (Cebu). -- STEINDACHNER, Abhandl. Senckenburg. Naturf., Ges., vol. 25, p. 450, 1900 (1901) (Ternate). -- GÜNTHER, Journ. Mus. Godeffroy, vol. 8, pt. p , p. 352, 1909 (copied). -- WEBER, Siboga Exped., vol. 57, Fische, p. 123, 1913 (Makassar; Karwa, west Ceram; Salibabu; Saleh Bay, Sumbawa).

Mastacembelus melanotus BLEEKER, Atlas Ichth. Ind. Néerland, vol. 6, p. 47, 1869-72 (Java, Singapore, Celebes, Moluccas).

Tylosurus melanotus FOWLER, Journ. Acad. Nat. Sci. Philadelphia, ser. 2, vol. 12, p. 501, 1904 (Padang). -- WEBER and BEAUFORT, Fishes Indo-Austral. Archip., vol. 4, p. 127, fig. 47, 1922 (Makassar, Celebes; Moluccas; Salibabu; Sumbawa). -- HERRE, Philippine Journ. Sci., vol. 36, no. 2, p. 231, June, 1928 (Vigan; Gingoog; Sitanki).

Strongylura melanotus FOWLER, Proc. Acad. Nat. Sci. Philadelphia, 1925, p. 200 (Delagoa Bay); 1927, p. 261 (Santa Maria; Vigan).

Tylosurus crocodilus (not LE SUEUR) FOWLER, Journ. Acad. Nat. Sci. Philadelphia, ser. 2, vol. 12, p. 501, pl. 11, upper figure, 1904 (Padang). -- WEBER and BEAUFORT, Fishes Indo-Austral. Archipel., vol. 4, p. 120, 1922 (compiled; part).

Strongylura crocodila FOWLER, Proc. Acad. Nat. Sci. Philadelphia, 1915, p. 5 (Padang example); Mem. Bishop Mus., vol. 10, p. 74, 1928 (south east of Tahiti); vol. 11, no. 5, p. 319, 1931 (compiled); Proc. Acad. Nat. Sci. Philadelphia, 1929, p. 603 (Hong Kong).

Tylosurus giganteus (not SCHLEGEL) EVERMANN and SEALE, Bull. Bur. Fisher., vol. 26, p. 58, 1906 (1907) (Bacon).

Belone robusta (not GÜNTHER) REGAN, Ann. Natal Govt. Mus., vol. 1, pt. 3, p. 243, 1908 (Kosi Bay).

Tylosurus robusta GILCHRIST and THOMPSON, Ann. Durban Mus., vol. 1, no. 4, p. 310, 1917 (compiled).

Depth $13\frac{3}{4}$ to 15, compressed, caudal peduncle tetrahedral; head 3-1/6 to 3-2/3, width 6-2/5 to $6\frac{3}{4}$. Snout $1\frac{1}{2}$ to 1-4/7 in head from snout tip; eye 8-7/8 to 9, 5-7/8 to 7-1/5 in snout, 1-1/10 to 1-1/5 in interorbital; maxillary reaches 1/6 to 1/5 in eye, length to front angle 2-1/3 to 2-7/8 in rest of head posteriorly; canines slightly inclined posteriorly; interorbital 8-1/8 to 8-3/5 in head from snout tip, level, with broad and rather shallow median depression.

Scales 240 to 285 in median lateral or axial series to caudal base; 182 to 220 predorsal forward to occiput; 20 or 21 above lateral line to dorsal origin; 17 or 18 postocular to preopercle ridge. Scales with 31 to 45 parallel vertical striae, more or less complete across median or vertical axis.

D. II, 23 or II, 24, first branched ray $4\frac{1}{2}$ to 4-3/5 in total head length; A. II, 20 or II, 21, first branched ray 4-2/3 to 5-1/5; least depth of caudal peduncle 1-3/5 to $1\frac{3}{4}$ in eye; caudal 2-7/8 to 3-1/8 in total head, well forked; pectoral 4 to 4-1/5; ventral 5 to $5\frac{1}{2}$, reaching 2-1/5 to 2-1/3 to vent.

Back and upper surfaces brown, sides and under surfaces silvery white. Iris silvery white. Fins brownish. Dorsal and caudal darker terminally and last shorter dorsal rays blackish terminally. Edges of shorter anal rays and membranes variably dusky to blackish. Paired fins brownish.

Red Sea, Arabia, Zanzibar, Mozambique, Portuguese East Africa, Natal, Madagascar, India, Singapore, East Indies, Philippines, China, Formosa, Japan, Queensland, Melanesia, Polynesia. Belone timucoides Van Hasselt 1823 has priority over the usually accepted Belone choram Rippell 1835.

I have accepted the original citation of Belone coromandelica Van Hasselt from Weber and Beaufort, who state that it is a nomen nudum. This name, however, as grouped in Bleeker's synonymy of Mastacembelus melanotus would suggest that it may be earlier than Belone timucoides and even intended for the Wahlah kuddera of Russell, in which case coromandelica would be the correct specific name for the present species.

5142, 5143. Jolo, Jolo Island. March 5, 1908. Length 588 to 632 mm.

5008. South Tumindao, lagoon anchorage. February 26, 1908. Length 708 mm.

U. S. N. M. no. 56082. Bacon. Bureau of Fisheries (3697). Length 307 mm. As Tylosurus giganteus.

A. N. S. P. no. 27461. Padang, Sumatra. A. C. Harrison and H. L. Hiller. Length 513 mm. (from front eye edge). In arrack clear dark hyaline-green above, line of demarcation along upper side very distinct and lower sides and body ventrally silvery-white. Dorsal and caudal dark brown, tinged with green. Pectoral base green, fin blackish terminally. Anal and ventral pale grayish, whitish basally. As Tylosurus melanotus.

A. N. S. P., 1 example. Padang, Sumatra. A. C. Harrison and H. L. Hiller. Length 330 mm. (lower caudal lobe damaged). In arrack deep hyaline-green above, line of demarcation on back above distinct, rest of sides and lower surface, also of head, silvery white. Dorsal dusky, front rays dull olivaceous basally. Pectoral base greenish, fin blackish terminally. Ventral and anal white basally, terminally grayish or dusky. As Tylosurus crocodilus.

Strongylura philippina (Herre)

Tylosurus philippinus HERRE, Philippine Journ. Sci. vol. 36, no. 2, p. 228, pl. 3, June, 1928 Otype locality: Coron, Busuanga; Bato Bato, Tawi Tawi; Sitanki, Borneo).

Depth 11¼ to 11-1/3, compressed elongate body roughly pentagonal; head 2-4/5 to 2-9/10. Snout 1-2/3 in head; eye 9 to 10, 6 to 6¼ in snout, 1¼ to 1-1/3 in interorbital, 2-2/3 to 2¾ in postorbital; maxillary not entirely concealed by preorbital; end of mandible extending beyond snout in thick, spongy, somewhat flexible tip which rises above so upper jaw rests upon it and its upper profile continuous with that of lower jaw tip when mouth closes; canines long, strong, pointed, vertical; head flat above, with wide, deep, median, scaleless channel and small narrow elongate groove each side; space between these and outer margin of interorbital with longitudinally divergent striae; median channel narrows abruptly anteriorly and prolonged in narrow median groove to tip of beak.

Scales 194 ♣ 10 in lateral line; 22 above lateral line to dorsal origin; preopercle entirely finely scaled, opercle and top of head naked. Lateral line forms low keel on caudal peduncle.

D. II, 18 to II, 20, second simple ray 3 to 3-1/5 in total head; A. I or II, 18 to 20, second simple ray 2-2/3 to 3½; least depth of caudal peduncle 1-1/5 in eye; caudal forked, lower lobe longer and 2-2/5 to 2½ in total head; pectoral 3-1/3 to 3-4/5; ventral 3¾, origin midway between hind pupil edge and caudal base, reaches 1½ to anal.

Brownish above, silvery below. Opercles and under side of head white. Fins colorless, except upper half of dorsal which more or less dusky and caudal medially dusky to blackish at outer edge. Length 390 to 462 mm. (Herre.)

Philippines, Borneo. Very close to Strongylura crocodilus, apparently only differing in the end of its jaws, which may be a condition of youth.

Strongylura anastomella (Valenciennes)

Belone anastomella VALENCIENNES, Hist. Nat. Poiss., vol. 18, p. 446, 1846 (type locality: China). -- GÜNTHER, Cat. Fish. Brit. Mus., vol. 6, p. 249, 1866 (Shanghai, China, Japan, India); Ann. Man. Nat. Hist., ser. 4, vol. 13, p. 158, 1874 (Chefoo). -- KÁROLI, Termesz. Füzetek, Budapest, vol. 5, p. 182, 1881 (Menam River). -- STEINDACHNER, and DÖDERLEIN, Denks. Akad. Wiss. Wien, Math.-nat. Kl., vol. 49, pt. 1, p. 293, 1885 (Tokyo). -- ELERA, Cat. Fauna Filip., vol. 1, p. 573, 1895 (Luzon, Cavite, Santa Cruz). -- ISHIKAWA and MATSUURA, Prelim. Cat. Fish. Mus., Tojyo, p. 18, 1897 (reference).

Mastacembelus anastomella BLEEKER, Nederland. Tijdschr. Dierk., vol. 4, p. 149, 1873 (compiled).

Tylosurus anastomella JORDAN and SNYDER, Annot. Zool. Japon., vol. 3, p. 61, 1901 (reference). -- JORDAN and STARKS, Proc. U. S. Nat. Mus., vol. 26, p. 531, 1903 (Yokohama, Tokyo, Matsushima, Hakodate). -- REGAN, Ann. Mag. Nat. Hist., ser. 8, vol. 7, p. 332, 1911 (name). -- JORDAN and METZ, Mem. Carnegie Mus., vol. 6, p. 25, 1913 (Fusan). -- WU, Contrib. Biol. Lab. Sci. Soc. China, vol. 5, no. 4, p. 63, fig. 51, 1929 (Amoy). -- SOWERBY, Natural. in Manchuria, vol. 4, p. 161, 1930 (Pei tai Ho; China Wang Tao; Dalny; Antung). -- CHU, Biol. Bull. St. John's Univ., Shanghai, no. 1, p. 86, Jan. 1931 (compiled). -- ANONYMOUS, Illustr. Jap. Aquat. Plant. Animals, vol. 1, pl. 21, fig. 8, 1931.

Strongylura anostomella FOWLER, Proc. Acad. Nat. Sci. Philadelphia, p. 5, 1919 (Hakodate, Japan). (Error.)

Strongylura anastomella FOWLER, Hong Kong Naturalist, vol. 3, nos. 3 - 4, p. 262, fig. 8, Dec. 1932 (compiled).

Belonia ciconia RICHARDSON, Ichth. China Japan, p. 246, 1846 (type locality: Chinese Seas; Canton).

Belone esocina BASILEWSKY, Nouv. Mém. Soc. Nat. Moscow, vol. 10, p. 260, 1855 (type locality: Mari prov. Shandun).

Mastacembelus esocina BLEEKER, Nederland Tijdschr. Dierk., vol. 4, p. 149, 1873 (compiled).

Tylosurus esocina CHU, Biol. Bull. St. John's Univ., Shanghai, no. 1, p. 86, Jan. 1931 (compiled).

Belone japonica (DÖDERLEIN) STEINDACHNER and DÖDERLEIN, Denks. Akad. Wiss. Wien, Math.-nat. Kl., vol. 49, pt. 1, p. 293, 1885 (name in synonymy).

Depth 17-1/4 to 22-4/5, compressed; head 2-9/10 to 3-1/8, width 7-4/5 to 12-1/3. Snout 1-1/3 to 1½ in head; eye 12-1/4 to 15-1/5, 8 to 11-1/5 in snout, 1 to 1-3/5 in interorbital; maxillary reaches ¼ to 2/7 in eye, length to maxillary point 2-1/8 to 3-2/5 in rest of head posteriorly; canines but slightly inclined backward; interorbital 10 to 14-4/5, level, with broad depression.

Scales 178 to 190 in median lateral or axial series to caudal base; 122 to 125 predorsal forward to occiput; 12 above lateral line to dorsal origin; 14 postocular to vertical preopercle ridge. Scales with 23 to 26 vertical striae each side of median vertical line, more or less complete.

D. II, 17, first branched ray 6¼ to 9-4/5 in head from snout tip; A. II, 21 to II, 24, first branched ray 4-1/5 to 5¼; least depth of caudal peduncle 1¼ to 1-3/5 in eye; caudal 3-7/8 to 4-1/10 in head to snout tip, slightly emarginate behind; pectoral 4-1/8 to 5; ventral 7½ to 7-7/8.

Back and upper surfaces brown, sides and below silvery white. Iris whitish. Fins brownish, lower ones paler to whitish, end of dorsal lobe and caudal points dusky. Pectoral blackish terminally.

China, Japan, Korea. Though recorded from India by Günther and the Philippines by Elera, these records likely erroneous.

U.S.N.M. no. 50740. Tokyo, Japan. D. S. Jordan and J. O. Snyder. Length 195 to 394 mm. Five examples.

U.S.N.M. no. 57603. Japan. P. L. Jouy. Length 434 mm.

A.N.S.P., nos. 31698 to 31699. Hakodate. Stanford University.

Strongylura crocodila (LeSueur)

Belona crocodila (PERON and LESUEUR) LESUEUR, Journ. Acad. Nat. Sci. Philadelphia, vol. 2, pt. 1, 1821, p. 129 (type locality: Mauritius).

Belone crocodilus VALENCIENNES, Hist. Nat. Poiss., vol. 18, p. 440, pl. 549, 1846 (Mauritius; Java; Red Sea). -- THIOLLIÈRE, Fauna Woodlark, p. 204, 1857 (Woodlark Island). -- GUICHENOT, Notes Ile Réunion, vol. 2, p. 29, 1826.-- SCHMELTZ. Cat. Mus. Godeffroy, no. 3, p. 74, 1866 (Samoa); no. 4, p. 24, 1869 (Samoa).

Mastacembelus crocodilus BLEEKER, Nederland Tijdschr. Dierk., vol. 3, p. 226, 1850 (part).

Tylosurus crocodilus WEBER and BEAUFORT, Fishes Indo-Austral. Archipel., vol. 4, p. 120 (compiled; part). -- HERRE, Philippine Journ. Sci., vol. 36, no. 2, p. 229, pl. 4, fig. 2, June 1928 (Tacloban, Manila Bay, Sitanki, Zamboanga).

Strongylura crocodila FOWLER, Mem. Bishop Mus., vol. 10, p. 74, 1928 (part); vol. 11, no. 5, p. 319, 1931 (compiled).

Mastacembelus melanotus (not BLEEKER 1850) BLEEKER, Atlas Ichth. Ind. Néerland., vol. 6, p. 47, (not figure), 1866-72 (part).

Depth 11-2/3 to 14-1/6, body well compressed, deep; head 2-9/10, width 5-1/3 to 5-2/3. Snout 1-3/5 to 1-2/3 in head from snout tip; eye 10¼ to 11½, 6-2/5 to 6-2/3 in snout, 1½ to 1¾ in interorbital; maxillary reaches ¼ to 1/3 in eye, length to anterior point 2½ to 2-7/8 in rest of head posteriorly; lower jaw protrudes 2/3 eye diameter beyond upper; teeth nearly vertically erect; interorbital 6-1/3 to 6½, level, with very deep median depression.

Scales 195 to 202 in lateral axial series to caudal base; 138 to 142 predorsal forward to occiput; 19 or 20 above lateral line to dorsal origin; 16 or 17 postocular to hind preopercle ridge. Scales with 24 to 32 parallel vertical striae, mostly continuous over vertical axis of scale.

D. II, 19 or II, 20, first branched ray forming long lobe, 3 to 3¼ in total head length or 1-2/3 to 1-4/5 in fin base; A. II, 18 or II, 19, first branched ray 2¾ to 3 in total head or 1-1/3 to 1-2/5 in fin base; least depth of caudal peduncle 1 to 1-1/5 in eye; caudal 2-2/5 to 3 in total head; pectoral 3-1/3 to 3½; ventral 3-3/5 to 4, nearly reaches vent.

Back and upper surface of head brown, sides and lower surfaces silvery white. Iris white. Fins all more or less brownish, lower ones paler.

Red Sea, Mauritius, East Indies, Philippines, Melanesia, Polynesia. The two examples listed below are interesting in establishing identification with the figure of Valenciennes. The robust head and erect teeth are in agreement as well as the position of the fins, except the ventral. The right only is shown and what appears to me too greatly advanced, for it would seem to reach half way to the vent. My specimens also show much longer dorsal and anal fin lobes anteriorly. Their pectorals also are not tipped with dusky. It follows that the synonymy as given by Weber and Beaufort is therefore largely irrelevant and should fall with their Tylosurus melanotus.

4619. Port Binanga, Subig Bay. January 8, 1908. Length 621 mm.

5120. Sandakan market, Borneo. March 4, 1908. Length 577 mm.

Strongylura punctulata (Günther)

Belone punctulata GÜNTHER, Proc. Zool. Soc. London, 1871, p. 670 (type locality: Manado, Celebes).

Tylosurus punctulatus WEBER and BEAUFORT, Fishes Indo-Austral. Archipel., vol. 4, p. 129, fig. 48, 1922 (Balikpapan, Borneo).

Depth nearly 12, body moderately compressed, caudal peduncle only little higher than broad; head 2-4/5. Eye nearly 7-1/3 in snout, $1\frac{1}{2}$ in interorbital, 2-3/5 to 2-4/5 in postorbital; maxillary entirely hidden by preorbital; mandible strong, height below pupil about equals vertical eye diameter; canines moderate, subulate, straight; tongue smooth; head above with deep broad median groove, tapering anteriorly and prolonged into narrow median groove on beak; superciliary region with numerous fine striae.

Scales 225 in lateral series; 18 above lateral line to dorsal origin. Lateral line forms distinct keel on caudal peduncle which is not black.

D. II, 19, median and hinder rays shorter than prolonged anterior rays, origin above second anal ray; A. II, 18 to II, 19, rays like dorsal only first much longer; caudal forked, lobes pointed; P. I, 13, somewhat longer than postorbital; V. I, 5, long as pectoral, base midway between eye center and caudal base.

Back dark, with green reflection. Belly white or light blue gray. Sides with orange spots. Fins dusky. Length 575 mm.

(Weber and Beaufort.)

East Indies.

Strongylura gavialoides (Castelnau)

Belone gavialoides CASTELNAU, Proc. Zool. Acclimat. Soc. Victoria, vol. 2, p. 142, 1873 (type locality: Freemantle, Western Australia). -- MACLEAY, Proc. Linn. Soc. New South Wales, vol. 5, pt. 2, p. 179, 1881 (Western Australia).

Tylosurus gavialoides MCCULLOCH, Austral. Mus. Mem., no. 5, pt. 1, p. 99, June 29, 1929 (Western Australia; Queensland).

Body rather compressed, depth less than pectoral length; head $3\frac{1}{2}$. Snout much longer than rest of head, with long groove above; eye 2 in interorbital; teeth very fine, numerous, with line of larger conical ones each side of both jaws, well spaced, smaller and closer toward rictus; palate and tongue smooth; head flat above, with 2 large radiated impressions.

Scales small. Upper surface of head smooth, with elongated space before eyes with small scales. No lateral edges to tail.

D. 22, front rays form lobe, middle and hind rays short; A. 23; caudal strongly emarginated, lower lobe longer; P. 12.

Dark brown in spirits, silvery below. Snout black. Fins yellow. Length 1025 mm. (Castelnau.)

Western Australia, Queensland.

Strongylura auloceps Fowler and Bean

Strongylura auloceps FOWLER and BEAN, Proc. U. S. Nat. Mus., vol. 63, p. 12, 1923 (type locality: Fiji or Samoa). --

FOWLER, Mem. Bishop Mus., vol. 10, p. 74, 1928 (copied).

Depth 20, body moderately compressed, short caudal peduncle compressed; head 3-1/6, width 7-3/5. Snout 1-2/5 in head from snout tip; eye $11\frac{1}{4}$, 8-1/5 in snout, $1\frac{1}{4}$ in interorbital; maxillary reaches $\frac{1}{4}$ in eye, length to anterior point 1-7/8 in rest of head posteriorly; canines slightly inclined posteriorly; interorbital 8-7/8, level, with very shallow narrow median depression.

Scales 300 in lateral axial series to caudal base; 218 predorsal forward to occiput; 20 above lateral line to dorsal origin; 22 postocular to preopercle edge. Scales with 32 to 44 parallel vertical striae each side, usually complete over median axis.

D. II, 22, I, first branched ray (tips broken) $6\frac{1}{4}$ in total head; A. II, 20, I, first branched ray 5-4/5; least depth of caudal peduncle 1-3/5 in eye; caudal (damaged) 4-2/5 ? in total head length; pectoral $4\frac{1}{2}$; ventral 5-7/8, reaches $2\frac{1}{2}$ to vent.

Back olive brown, sides and lower surfaces evidently paler to whitish. Fins all browmish, apparently without black.

Polynesia. Apparently a valid species, known by its very long, slender beak, deep and wide occipital depression, in combination with its other characters.

U.S.N.M. no. 83422, type. Fiji. Wilkes Exploring Expedition. Length 485 mm. (caudal damaged).

Strongylura indica (LeSueur)

Belona indica LESUEUR, Journ. Acad. Nat. Sci. Philadelphia, vol. 2, pt. 1, p. 130, 1820 (type locality: Indian Ocean).

Strongylura indica FOWLER, Copeia, no. 122, p. 82, Nov. 20, 1922 (Hawaii); Bull Bishop Mus. 22, p. 6 (Guam), p. 23 (Honolulu), 1925; Mem. Bishop Mus., vol. 10, p. 73, 1928 (Honolulu, Tubuai, Guam); vol. 11, no. 5, p. 319, 1931 (Honolulu); Proc. U. S. Nat. Mus., vol. 30, art. 6, p. 5, 1932 (Taipi Bay, Nukuhiva, Marquesas); Hong Kong Naturalist, vol. 3, nos. 3-4, p. 263, fig. 9, Dec. 1932 (Hong Kong).

Belone gigantea SCHLEGEL, Fauna Japonica, Poiss. pts. 10 to 14, p. 245, 1846 (type locality: seas of Japan). -- BLEEKER, Verh. Batav. Genootsch. (Nal. Ich. Japan), vol. 25, p. 18, 1853 (reference). -- BREVOORT, Narr. Exped. Japan, Perry, p. 280, pl. 7, fig. 2, 1856 (Lew Chew). -- BLEEKER, Naturk. Tijds. Nederland., Indië, vol. 13, p. 385, 1857 (Batjan); Act. Soc. Ind. Néerland., vol. 3, no. 3, p. 21, 1857-58 (Japan); Naturk. Tijds. Nederland., Indië, vol. 15, p. 243, 1858 (Singapore); vol. 18, p. 356 (Bawean); Act. Soc. Sci. Ind. Néerland.(Achst Sumatra), vol. 8, p. 55, 1859 (Benkulan; Siboga); Naturk. Tijds. Nederland., Indië, vol. 20, p. 141 (Badjoa, Boni), p. 142 (Cocos-Keeling) 1859-60; vol. 21, p. 139, 1860 (Muntok, Banka). -- GÜNTHER, Journ. Mus. Godeffroy, vol. 8, pt. 16, p. 350, 1909 (Indian Ocean; tropical Pacific). -- WEBER, Siboga Exped., vol. 57, Fische, p. 122, 1913 (Makassar; Kawa, west Ceram).

Mastacembelus giganteus BLEEKER, Versl. Meded. Akad. Wet. Amsterdam, vol. 16, p. 368, 1864, (Aru Islands).

Tylosurus giganteus JORDAN and SNYDER, Annot. Zool. Japon., vol. p. 61, 1901 (reference). -- JENKINS, Bull. U. S. Fish Comm., vol. 22, p. 433, 1902 (Honolulu). -- JORDAN and STARKS, Proc. U. S. Nat. Mus., vol. 26, p. 529, 1903 (Nagasaki; Wakanoura). -- JORDAN and EVERMANN, Bull. U. S. Fish Comm., vol. 23, pt. 1, p. 124, fig. 39 (copied), 1903 (1905) Honolulu; Hilo). -- SEALE, Occas. Pap. Bishop Mus., vol. 4, no. 1, p. 12, 1906 (Tubuai, Austral. Islands). -- JORDAN and SEALE, Bull. Bur. Fisher., vol. 25, p. 207, 1905 (1906)(Samoa); vol. 26, p. 8, 1906 (1907) (Cavite); Proc. U. S. Nat. Mus., vol. 28, p. 773, 1907 (Negros). -- EVERMANN and SEALE, Bull. Bur. Fisher., vol. 26, p. 58, 1906 (1907) (Bacon; part). -- JORDAN and RICHARDSON, Bull. Bur. Fisher., vol. 27, p. 249, 1907 (1908) (Manilo; Iloilo). -- FRANZ, Abhandl. Bayer. Akad. Wiss. München, 4 Suppl., band 1, p. 24, 1914 (Yokohama). -- HERRE, Philippine Journ. Sci., vol. 36, no. 2, p. 226, pl. 4, fig. 1, June 1928 (Manila, Calapan, Mangarin, Bacon, Bantayan, Estancia, Culion, Dumaguete, Panacan, Zamboanga; Sitanki). -- CHU, Biol. Bull. St. John's Univ., Shanghai, no. 1, p. 86, Jan. 1931 (reference).

Belone annulata VALENCIENNES, Hist. Nat. Poiss., vol. 18, p. 447, pl. 550, 1846 (Type locality: Celebes; Tongatabu; Seychelles; Pondicherry). -- CANTOR, Journ. Asiatic Soc. Bengal, vol. 18 pt. 1, p. 244, 1849 (1850) (Pinang). -- JERDON, Madras Journ. Liter. Sci., 1851, p. 147. -- BLEEKER, Naturk. Tijds. Nederland. Indië, vol. 3, p. 749, 1852 (Celebes); Verh. Batav. Gennotsch. a (Snock.), vol. 24, p. 27, 1852 (Pinang); (Nal. Ich. Bengal.), vol. 25, pp. 8, 72, 1853 (compiled). -- DAY, Fishes of Malabar, p. 165, 1865. -- GÜNTHER, Cat. Fish. Brit. Mus., vol. 6, p. 240, 1866 (Pinang, China, Formosa, Gillolo). -- DAY, Proc. Zool. Soc. London, 1865, p. 369 (Cochin, Malabar). -- ALLEYNE and MACLEAY, Proc. Linn. Soc. New South Wales, vol. 1, p. 349, 1876 (Percy Island; Cape York). -- MARTENS, Preuss. Exp. Ost-Asien, vol. 1, pp. 235, 325, 400, 1876 (Singapore). -- DAY, Fishes of India, pt. 3, p. 510, pl. 120, fig. 1, 1877. -- KLUNZINGER, Sitz. Ber. Akad. Wiss. Wien Math.-Naturw. Kl., vol. 80, pt. 1, p. 413, 1879 (Port Denison). -- GÜNTHER, Rep. Voy. Challenger, vol. 1, pt. 6, p. 36, 1880 (Levuku, Ovalu, Kandavu, Fiji), p. 50 (Somerset). -- MACLEAY, Proc. Linn. Soc. New South Wales, vol. 5, pt. 2, p. 176, 1881 (Percy Islands; Cape York). -- KÁROLI, Termesz. Füzetek, Budapest, vol. 5, p. 181, 1881 (Singapore). -- DAY, Fauna Brit. India, Fishes, vol. 1, p. 419, 1889. -- SAUVAGE, Hist. Nat. Madagascar, Poiss., p. 526, 1891 (reference). -- ELERA, Cat. Fauna Filip., vol. 1, p. 573, 1895 (Luzon; Batangas; Nasugbu). -- ISHIKAWA and MATSUURA, Prelim. Cat. Fish. Mus. Tokyo, p. 18, 1897 (reference). -- STEINDACHNER, Denkschr. Akad. Wiss. Wien, Math.-Nat. Kl, vol. 70, p. 512, 1901 (Honolulu; Samoa).

-- DUNCKER, Mitt. Naturhist. Mus. Hamburg, vol. 21, p. 169, 1903 (1904) (reference). -- VOLZ, Naturhist. Tijds. Nederland. Indië, vol. 66, p. 176, 1907 (Siboga; Benkulen).

Mastacembelus annulatus BLEEKER, Versl. Meded. Akad. Wet. Amsterdam, ser. 2, vol. 2, p. 293, 1868 (Rio, Bintang); Atlas Ichth. Ind. Néerland.,vvol. 6, p. 48, pl. ( ) 258, fig. 3 (Java, Madura, Bawean, Cocos, Sumatra, Singapore, Pinang, Banka, Celebes, Batjan, Pinang, Batjan, Ternate, Amboina) 1869-72; Nederland. Tijdschr. Dierk., vol. 4, p. 149, 1873 (Hong Kong).

Mastaccembelus annulatus BLEEKER, Nederland. Tijdschr. Dierk., vol. 4, p. 154, 1873 (Hong Kong; error).

Tylosurus anulatus SEALE, Philippine Journ. Sci., vol. 5, no. 4, p. 267, Oct. 1910 (Borneo; error).

Tylosurus annulatus WEBER and BEAUFORT, Fishes Indo-Austral. Archipel., vol. 4, p. 126, 1922 (Nias; Pulu Weh; Batavia and Semarang, Java; Lambok; Makassar, Celebes; Ambon; Banda; Kawa, Ceram; Wilhelms-land, New Guinea).

Belone timucoides (not VAN HASSELT) Journ. Indian Archipel., vol. 3, pp. 67, 68, 1849.

Belone melanurus BLEEKER, Verh. Batav. Genootsch. a (Madura), vol. 22, p. 11 (type locality: Madura Strait near Kammal; Surabaya), p. 5 (Kammal). -- KNER, Reise Novara, Fische, p. 321, 1865.

Belone cylindrica BLEEKER, Verh. Batav. Genootsch. (Snoek. Vissch.), vol. 24, p. 13, 1852 (type locality: Batavia; Surabaya; Kamall; Siboga); Naturk. Tijds. Nederland. Indië, vol. 2, p. 472, 1851 (Rio); vol. 3, p. 235 (Amboina; Moluccas), 249, 546, 549 (Amboina), 1852; vol. 4, p. 597 (Halmaheira), 1853; vol. 5, p. 69 (Solor), p. 154 (Macassar), 1853; vol. 6, p. 458 (Amboina), 1854; vol. 7, p. 228 (Macassar; Manado), p. 314 (Bantem), 1854; vol. 8, p. 437, 1855 (Bonthaian, Celebes); vol. 9, p. 492, 1855 (Batjan); vol. 10, p. 362, 1856 (Ternate); vol. 12, p. 193 (Ternate), p. 294 (Boleling, Bali), 1856; Act. Soc. Sci. Ind. Néerland., (Manado) vol. 1, no. 3, p. 5, p. 10 (Macassar), 1856; vol. 1, no. 5, p. 7, 1856 (Amboina); vol. 2, no. 7, p. 7, 1857 (Amboina). -- KNER, Reise Novara, Fische, p. 321, 1865 (Hong Kong; Madras).

Belone choram (not FORSKÅL) GÜNTHER, Fishes of Zanzibar, p. 117, 1865.

Mastacembelus choram BLEEKER, Nederland. Tijdschr. Dierk., vol. 3, p. 277, 1866.

?Belone koseirensis KLUNZINGER, Verh. zool. bot. Ges. Wien, vol. 21, p. 579, 1871 (type locality: Koseir, Red Sea).

Strongylura fijiense FOWLER and BEAN, Proc. U. S. Nat. Mus., vol. 63, p. 13, 1923 (type locality: Fiji); Mem. Bishop Mus., vol. 10, p. 74, 1928 (copied).

Depth 14½ to 14-7/8, but slightly compressed or mostly sub-cylindrical; head 3-1/10 to 3¼, width 4-7/8 to 6-1/8. Snout 1-3/5 in head from snout tip; eye 8-1/3 to 11¼, 5-2/3 to 7-1/5 in snout, 1-1/3 to 1-2/3 in interorbital; maxillary reaches 1/8 to ¼ in eye, length to anterior point 2-7/8 to 3-1/6 in rest of head posteriorly; canines nearly vertically erect or slightly curved forward; interorbital 5-7/8 to 7, level, with broad shallow median depression.

Scales 320? to 355 in lateral axial series to caudal base; 170 to 265 predorsal; 21 to 23 above lateral line to dorsal origin; 24 to 26 postocular to vertical preopercle ridge. Lateral line with keel along caudal peduncle side and on caudal fin base. Scales with 26 to 31 striae each side of vertical median axis, more or less continuous.

D. II, 20, I or II, 21, I, first branched ray 4-1/8 to 4-1/5 in head from snout tip; A. II, 16, I, to II, 22, I, first branched ray 3-3/5 to 4½; least depth of caudal peduncle 1¼ to 1-2/5 in eye; caudal 2-2/3 to 2-4/5 in head from snout tip, forked; pectoral 3-1/3 to 3-2/3; ventral 4 to 4-1/8, reach 2-2/3 to vent.

Back brown, also head above, lower surfaces silvery white. Iris white. Fins more or less browmish. Dorsal, caudal and pectoral dusky terminally, also caudal medially. Posterior part of dorsal dusky. Lower fins pale to whitish.

India, Pinang, Singapore, East Indies, Philippines, China, Formosa, Riu Kiu, Japan, North Australia, Queensland, Micronesia, Polynesia, Hawaii. Known chiefly by the long black posterior dorsal rays, these usually forming a broad rounded lobe high as anterior pointed lobe of fin. It greatly suggests Athlennes hians, as the two species are shown on Bleeker's plate and only distinguished by the thinner body of the former.

The type of Strongylura fijiense is undoubtedly the present species. Its very fine scales, counted along the sides of the back as 450, are much smaller and more numerous or with finely crowded appearance, than those below the median lateral or axial line where they would number about 270. The descrepancies in the counts are due to the method of counting, this greatly enhanced by their irregularities. Thus in a given space as 10 mm the scales may vary 13 to 18, or even more.

Belone koseirensis Klunzinger is imperfectly described and may be the present species:

Depth 18; head $3\frac{3}{4}$. Snout $4\frac{1}{2}$ in body; eye $7\frac{1}{4}$ in head, somewhat large, greater than 1; postorbital $1\frac{3}{4}$ in head; tongue smooth; lower jaw projects; supraorbital with 3 ridges.

D. 20 (22?), last ray not long as body depth, reaches caudal base; A. 19 (22?); P. 12.

Above greenish gray, sides and belly silvery. Lateral blackish longitudinal row of obsolete blackish spots. Yellowish lateral streak to below middle of dorsal. Fins clear. Caudal blackish, also last dorsal rays. Length 515 mm.

5785. Baganga Bay, Mindanao. May 13, 1908. Length 330 mm.

One example. Camp Overton Anchorage, Mindanao. Electric light. August 5, 1909. Length 137 mm.

5504. Catbalogan, Samar. April 14, 1908. Length 329.mm.

5511. Catbalogan. April 15, 1908. Length 558 mm.

One example. East side Tagbalaran Strait, Bohol. April 9, 1908. Length 47 mm.

10876, 10877. Jolo Anchorage, Jolo. March 5, 1908. Length 245 to 379 mm.

5863. Malabang, Mindanao. May 21, 1908. Length 458 mm.

4509. Manila market. December 12, 1907. Length 317 mm.

6327. Manila market. July 11, 1908. Length 354 mm.

4763, 4764, 4765. Nogas Point, Panay. February 4, 1908. Length 347 to 375 mm.

20494. Port Galera, Mindoro. June 9, 1908. Length 253 mm.

8219. River at Pasacao, Ragay Gulf, Luzon. March 9, 1909. Length 331 mm.

4918. Simulac Island. February 20, 1908. Length 610 mm.

5580. San Miguel Harbor, Ticao Island. April 21, 1908. Length 330 mm.

7122. San Vicente Harbor, Luzon side. November 13, 1908. Length 365 mm.

D. 5561. Teomabal Island (NW.), S. 36° W., o.2 mile (lat. 5°50'45" N., long. 121°01'15" E.), vicinity of Jolo. September 19, 1909. Length 38 to 183 mm. Twenty examples. All young and show bases of upper caudal rays blackish.

11742. Sandakan market, Borneo, Dutch East Indies. March 2, 1908. Length 308 mm.

U.S.N.M. no. 50738. Wakanoura. D. S. Jordan and J. O. Snyder. Length 478 to 566 mm. As Tylosurus schismatorhynchus. Two examples.

U.S.N.M. no. 52031. Negros. Dr. Bashford Dean. Length 425 mm. As Tylosurus giganteus.

U.S.N.M. no. 52366. Apia, Samoa. Bureau of Fisheries (07571). 1905. Length 460 mm. As Tylosurus giganteus.

U.S.N.M. no. 57604. Japan. P. L. Jouy. Length 390 to 508 mm. Two examples. As Tylosurus schismatorhynchus.

U.S.N.M. no 57948. Zamboanga. August 21, 1906. Dr. E. Mearns. Length 85 mm. As Tylosurus leiurus. With large black cutaneus flap on the under surface of the mandible and the long black posterior dorsal rays reach $\frac{3}{4}$ in caudal fin.

U.S.N.M. no. 72167. Iloilo. R. C. McGregor. Length 199 mm. As Tylosurus giganteus.

U.S.N.M. no. 83421. Fiji. Wilkes Exploring Expedition. Length 738 mm (caudal tips damaged). Type of Strongylura fijiense.

A.N.S.P., no. 29639. Mani, Hawaiian Islands. R. C. MacGregor. Stanford University.

Strongylura appendiculata (Klunzinger)

Belone appendiculatus KLUNZINGER, Verh. zool. bot. Ges. Wien, vol. 21, p. 580, 1871 (type locality: Red Sea).

Belone appendiculata GÜNTHER, Journ. Mus. Godeffroy, vol. 8, pt. 16, p. 351, fig. (head), 1909 (Muscat; Solomons).

Thalassosteus appendiculatus JORDAN, EVERMANN, TANAKA, Proc. Calif. Acad. Sci., ser. 4, vol. 16, p. 651, Nov. 14, 1927 (Honolulu).

Strongylura appendiculata FOWLER, Mem. Bishop Mus., vol. 10, p. 74, 1928 (compiled).

Depth 17 to 19, body moderately compressed, subcylindrical tail little higher than wide; head $3\frac{1}{2}$. Snout $5\frac{1}{2}$ to 6 in head; eye $8\frac{1}{2}$ to 9, somewhat large; behind tip of lower jaw low compressed bony keel 1/3 eye depth or less; teeth moderately strong, rough area of jaw edges moderately wide; tongue smooth. Gill opening extends below front eye edge.

Scales moderately small. Lateral line low, with slight keel on tail.

D. 26, begins behind anal origin, last rays reach nearly to caudal; A. 22; lower caudal lobe longer; P. 12; ventral 1½ times longer than eye, origin midway between hind eye edge and caudal base.

Sea green above, below silvery. Snout, teeth, and top of head green. Fins blackish. Anal with black spot above. Length 470 to 1000 mm.

(Klunzinger.)

Red Sea, Arabia, Solomons, Hawaii. The Hawaiian specimen, forming the basis of the genotype of Thalassosteus seems to agree. It is described with D. 25, A. 23, P. 13, scales 570. Jordan, Evermann, and Tanaka wrongly credit Günther as the author of the species instead of Klunzinger.

BELONIDAE

STRONGYLURINAE, new subfamily

Gill rakers absent or vestigeal. Enlarged teeth of both jaws well spaced strong canines. Strongylura, Ablennes, Xenentodon, Rhaphiobelone.

RHAPHIOBELONE, new genus

Type.--Rhaphiobelone dammermani, new species.

Bondy elongate, moderately compressed, slender. Head long, jaws prolonged into extraordinary slender and elongated points so head barely less than rest of entire body. Upper jaw only half or less than half of lower jaw and no dentition on lower anterior prolonged portion of mandible. Canines small, though well developed. Eye rather large. Maxillary concealed. Interorbital flattened. Scales small, not present on head except occipital region. Dorsal inserted at first fifth of anal base, front rays but little higher than others. Anal much longer and with front rays elevated, though not forming very distinct lobe. Caudal peduncle broadly depressed, so its width much greater than its depth. Caudal truncate. Pectoral high, moderate. Ventral inserted midway between nasal cavity and caudal base, small, reach $\frac{3}{4}$ to vent. Color with silvery.

This well-marked genus differs from the known genera in the above combination of characters. It greatly suggests Belone in its extremely depressed and similar caudal peduncle. On the contrary it differs at once from Belone in the absence of gill rakers. It further differs from this and all the known genera in the extraordinary prolonged, slender, needle-like jaws.

(Ῥάφιον a little needle, from ῥαφίς needle + Belone; with reference to the very long slender jaws.)

Rhaphiobelone dammermanni new species

Depth 33 to 39, body with more or less flattened sides, width of caudal peduncle 1 1/3 to 1 2/5 in eye; head 2 1/10 to 2 1/5, width 18 2/3 to 23 1/3. Snout 1 1/3 to 1 2/5 in head measured from snout tip; mandible tip to eye 1 1/5 to 1¼; eye 13 1/3 to 15 in head from snout tip, 9 2/3 to 11 1/3 in snout from snout tip, little greater than interorbital; maxillary point to eye 3 4/5 to 4 in head posteriorly; canines vertically erect; interorbital 19½ to 23 2/3, level, with wide deep median depression.

Scales 190 to 200 in lateral axial series to caudal base and 7 to 9 more on latter; 122 to 126 predorsal forward to occiput; 14 above lateral line to dorsal origin. Lateral line continuous along lower side of body at least far back as anal base and tubes simple.

D. II, 16 or II, 17, first branched ray 11 to 14 in total head length; A. II, 20 to II, 23, first branched ray 7¼ to 7 3/5; caudal 6 7/8 to 7 2/3, rounded, truncate behind; pectoral 7 4/5 to 8½; ventral 13 3/4 to 14, reaches 3 to 3 7/8 to vent.

Back and upper surfaces brown, sides and lower surfaces silvery white. Iris silvery white. Two dark median parallel lines down back. Silvery gray lateral axial band, widest on tail or along and close below caudal expansion. Fins all more or less pale or whitish.

Philippines.

Diagnosis. Contained in genus.

Type. - U. S. N. M. no.

Three examples. Jolo, Jolo Island. Electric light. February 8, 1908. Length 82? to 103? (beak broken) mm.

19849. Maculabo Island. June 13, 1909. Length 165 mm. (beak damaged).

One example. Pandanon Island. March 24, 1909. Length 75 mm.

One example. Port Dupon. March 17, 1909. Length 53 mm.

Three examples. Taal anchorage. Electric light. February 29, 1909. Length 108 to 162 mm. Largest type, other 2 paratypes.

20830. Varadero Bay, Mindoro. July 23, 1908. Length 135? (beak damaged) mm.

Genus Ablennes Jordan and Fordice

Athlennes JORDAN and FORDICE, Proc. U. S. Nat. Mus., vol. 9, p. 342, 1886. (Type, Belone hians VALENCIENNES, monotypic.)

Ablennes JORDAN and EVERMANN, Bull. U. S. Nat. Mus., no. 47, pt. 1, p. 717, 1896. (Type, Belone hians VALENCIENNES, virtually.) (Corrected orthography.)

Body elongate, very slender, little compressed. Both jaws extended as beak, lower somewhat longer, much longer in young and very young suggestive of hemiramphids. Each jaw armed with band of small sharp teeth, beside which series of long wide-set sharp conical unequal teeth. No teeth on vomer or palatines. Gill rakers obsolete. Bones usually more or less green. Scales small, thin. Lateral line extends along lower side of belly, becomes median on tail. No finlets. Dorsal fin mostly elevated in front. Caudal short, unequally lunate or forked. Pectorals moderate. Ventrals small, inserted behind middle of body.

Comparatively large voracious fishes, mostly in tropical and subtropical seas.

Ablennes hians (Valenciennes)

Belone hians VALENCIENNES, Hist. Nat. Poiss., vol. 18, p. 432, pl. 548, 1846 (type locality: Havanna; Bahia). -- GÜNTHER, Cat. Fish. Brit. Mus., vol. 6, p. 248, 1866 (copied); Journ. Mus. Godeffroy, vol. 8, pt. 16, p. 353, fig. (head) 1909 (Bermuda, Muscat, Red Sea, Madras, Hawaiian Islands). -- WEBER, Siboga Exped., vol. 57, Fische, p. 123, 1913 (Dobo, Aru Islands).

Athlennes hians JENKINS, Bull. U. S. Fish Comm., vol. 22, 1902, p. 433 (1903) (Honolulu). --SNYDER, Bull. U. S. Fish Comm., vol. 22, 1902, p. 521 (1904) (Lahaina, Mani). -- JORDAN and EVERMANN, Bull. U. S. Fish Comm., vol. 23, pt. 1, 1903, p. 126, fig. 40 (1905) (Honolulu). -- REGAN, Ann. Mag. Nat. Hist., ser. 8, vol. 7, p. 332, 1911 (name). -- WEBER and BEAUFORT, Fishes Indo-Austral. Archipel., vol. 4, p. 131, fig. 49, 1922 (Pulu Wei; Semarang; Aru Islands).

Tylosurus hians GILCHRIST and THOMPSON, Ann. South Afric. Mus., vol. 6, p. 265, 1908-11 (Natal); Ann. Durban Mus., vol. 1, no. 4, p. 310, 1917 (compiled).

Ablennes hians JORDAN and JORDAN, Mem. Carnegie Mus., vol. 10, p. 18, 1922 (reference). -- FOWLER, Proc. Acad. Nat. Sci. Philadelphia, 1925, p. 201 (Natal coast; Durban); 1927, p. 261 (Orion, Philippines). -- JORDAN, EVERMANN, TANAKA, Proc. Calif. Acad. Sci., ser. 4, vol. 16, p. 652, November 14, 1927 (Honolulu). -- HERRE, Philippine Journ. Sci., vol. 36, no. 2, p. 217, pl. 1, fig. 1, June 1928 (Manila Bay). -- FOWLER, Mem. Bishop Mus., vol. 10, p. 74, pl. 3E (Honolulu, Hawaii); vol. 11, no. 5, p. 319, 1931 (Honolulu).

Belone crocodila (not LE SUEUR) BLEEKER, Natuur. Geneesk. Arch. Nederland. Indië, vol. 2, pt. 3, p. 512, 1845 (Batavia).

Belone melanostigma (EHRENBERG) VALENCIENNES, Hist. Nat. Poiss., vol. 18, p. 450, 1846 (type locality: Red Sea). -- GÜNTHER, Cat. Fish. Brit. Mus., vol. 6, p. 241, 1866 (copied). -- KLUNZINGER, Verh. zool. bot. Ges. Wien, vol. 21, p. 581, 1871 (Red Sea). -- DAY, Fishes of India, pt. , p. 509, 18 (Bombay; India); Fauna British Ind. Fishes, vol. 1, p. 418, 1889. -- SAUVAGE, Hist. Nat. Madagascar, Poiss., p. 526, 1891 (name).

Tylosurus melanostigma JORDAN and EVERMANN, Proc. U. S. Nat. Mus., vol. 25, p. 329, 1902 (Formosa). -- JORDAN and RICHARDSON, Mem. Carnegie Mus., vol. 4, p. 175, 1909 (copied).

Belone gracilis (not LOWE) SCHLEGEL, Fauna Japonica, Poiss., pt. 2, p. 246, pl. 110, fig. 1, 1843 (Japan). -- BLEEKER, Verh. Batav. Genootsch. (Nal. Ich. Jap.), vol. 25, p. 18, 1853 (Avosagura, Japan); (Nal. Ich. Jap.), vol. 26, pp. 5, 116, 1857 (Nagasaki); Act. Soc. Sci. Ind. Néerland., vol. 3, no. 3, p. 6, 1857-58 (Japan); vol. 5, no. 9, p. 3, 1858-59 (Nagasaki).

Mastacembelus gracilis BLEEKER, Nederland. Tijdschr. Dierk., vol. 3, pp. 111, 230, 1866.

Belone schismatorhynchus BLEEKER, Nat. Tijds. Nederland. Indië, vol. 1, p. 95, 1850 (1851) (type locality: Batavia); Verh. Batav. Genootsch. (Snoek. Vissch.), vol. 24, p. 15, 1852 (Batavia); Nat. Tijds. Nederland. Indië, vol. 10, p. 362, 1856 (Ternate). --Kner, Reise Novara, Fische, p. 322, 1865 (Java). -- GÜNTHER, Cat. Fish. Brit. Mus., vol. 6, p. 239, 1866 (Red Sea). -- MEYER, Anal. Soc. Espan. Hist. Nat., Madrid, vol. 14, p. 38, 1885 (Manila Bay). -- ELERA, Cat. Fauna Filip., vol. 1, p. 573, 1895 (Luzon, Manila, Batangas, Nasugbu). -- ISHIKAWA and MATSUURA, Prelim. Cat. Fish. Mus. Tokyo, p. 18, 1897.

Mastacembelus schismatorhynchus BLEEKER, Atlas Ichth. Ind. Néerland., vol. 6, p. 49, pl. ( ) 268, fig. 2, 1866-72 (Java, Ternate, Japan).

Tylosurus schismatorhynchus JORDAN and SNYDER, Annot. Zool. Japon., vol. , p. 61, 1901 (reference). -- JORDAN and STARKS, Proc. U. S. Nat. Mus., vol. 26, p. 528 (Nagasaki, Wakanoura). -- JORDAN and RICHARDSON, Mem. Carnegie Mus., vol. 4, p. 175, 1909 (Takao, Formosa).

Tylosurus caeruleofasciatus STEAD, New Fishes New South Wales, no. 1, p. 3, pl. 1, Sept. 1908 (type locality: Port Stephens).

Athlennes caeruleofasciatus OGILBY, Mem. Queensland Mus., vol. 5, p. 130, pl. 14, July 10, 1916 (Moreton Bay).

Depth 14¼ to 14-4/5, strongly compressed, deepest about anal origin; head 3¼ to 3-7/8, width 7-1/8 to 8-1/5. Snout 1½ to 1-3/5 in head; eye 8-4/5 to 9¼, 6-1/5 to 7 in snout, 1 to 1-1/8 in interorbital; maxillary reaches eye, length to point in front 2¾ to 3¼ in head posteriorly; canines small, more or less inclined little backward; interorbital 9 to 10 in head from snout tip, with broad median depression.

Scales 445 to 470 in lateral axial series to caudal base; 350 to 360 predorsal forward to occiput; 25 above lateral line to dorsal origin; 14 or 15 on postocular to preopercle ridge. Scales with 20 to 27 vertical parallel striae each side of median vertical line, none continuous, at least in small or young.

D. II, 22 or II, 23, first branched ray 4-4/5 to 6 in head to snout tip; A. II, 22 to II, 24, first branched ray 4 to 4-1/5; least depth of caudal peduncle 1-2/3 to 1¾ in eye; caudal 2-4/5 to 3-2/3 in head, well forked; pectoral 3-1/5 to 4; ventral 4¾ to 4-7/8.

Back brown, sides and lower surfaces bright silvery white. Pale bluish band along edge of dark color of back and in band dozen or more dark or dusky blotches. Iris silvery white. Fins all more or less brownish, lobes of dorsal and and anal, and pectoral ends, dusky to blackish.

Red Sea, Natal, India, Philippines, Formosa, Japan, Queensland, New South Wales, Hawaii.

A437. Manila market. March 12, 1908. Length 434 mm.

A437. Manila market. March 13, 1908. Length 427 mm.

Genus Xenentodon Regan

Xenentodon REGAN, Ann. Mag. Nat. Hist., ser. 8, vol. 7, p. 332, 1911.

(Type Belone cancila BUCHANANAHAMILTON, designated by JORDAN Genera of Fishes, pt. 4, p. 540, 1920.)

Body greatly elongated, cylindrical or subcylindrical. Caudal peduncle compressed, deeper than wide. Head long. Premaxillaries and mandible prolonged into beak. Each jaw with a band of fine small teeth and a row of canines. No teeth on palate. Gill openings wide. No gill rakers. Only third pair of upper pharyngeals dentigerous, lower small, narrow and ends pointed or rounded. Scales small. Lateral line low, without keel on caudal peduncle. Dorsal and anal origins opposite. Caudal truncate or slightly rounded.

Fresh waters India, Ceylon, Burma, Malaya, and the East Indies.

Analysis of Species

a.[1] Depth 8 to 12; Indian. ~~cancila.~~

a.[1] Depth 14 to 18; East Indian. canciloides.

Xenentodon cancila (Buchanan-Hamilton)

Esox cancila BUCHANAN-HAMILTON, Fishes of Ganges, pp. 213, 380, pl. 27, fig. 70, 1822 (type locality; ponds and smaller rivers of Gangetic provinces).

Belone cancila VALENCIENNES, Hist. Nat. Poiss., vol. 18, p. 455, 1846 (Alipey, Bombay, Madras, Rangoon). -- MC CLELLAND, Calcutta Journ. Nat. Hist., vol. 3, p. , 1842 ( ). -- BLEEKER, Verh. Batav. Henootsch. (Nal. Bengal. Hind.), vol. 25, pp. 14, 29, 72, 145, 1853 (compiled). -- MASON, Burmah Nat. Resources, p. 689, 1860. -- DAY, Fishes of Malabar, p. 165, 1865; Proc. Zool. Soc. London, 1865, p. 369 (Kurriavanoor). -- GÜNTHER, Cat. Fish. Brit. Mus., vol. 6, p. 253, 1866 (Ceylon). -- MARTENS, Preuss Exp. Ost-Asien, vol. 1, p. 400, 1876 (Danan Sriang, Borneo). -- DAY, Journ. Linn. Soc. London, vol. 12, Zool., p. 571, 1876 (Deccan); Fishes of India, pt. 3, p. 511, pl. 118, fig. 5, 1877. -- VINCIGUERRA, Ann. Mus. Civ. Genova, p. 659, 1882-83 (Feb. 3, 1883) (Minla, Burma). -- DAY, Fauna British India, Fishes, vol. 1, p. 420, fig. 169, 1889 (compiled). -- DUNCKER, Mitt. Naturh. Mus. Hamburg, vol. 21, p. 169, 1903 (1904) (Kuala Lumpur, Pahang River); vol. 29, p. 257, 1911 (compiled).

Mastacembelus cancila BLEEKER, Nederland. Tijdschr. Dierk., vol. 2, p. 35 (Siam), p. 176 (Siam; copied), 1865.

Xenentodon cancila REGAN, Ann. Mag. Nat. Hist., ser. 8, vol. 7, p. 332, 1911 (name). -- FOWLER, Proc. Acad. Nat. Sci. Philadelphia, p. 6, 1919 (Ganges River,, India).

Belone graii SYKES, Trans. Zool. Soc. London, vol. 2, p. 367, pl. 63, fig. 4, 1841 (type locality; Mota Mola River, Poona, Dukhim). -- JERDON, Madras Journ. Liter. Sci., p. 345, 1849.

Belone grayi BLEEKER, Verh. Batav. Genootsch. (Nal. Ich. Bengal. Hind.), vol. 25, p. 26, 1853 (copied).

?Esox indica MCCLELLAND, Calcutta Journ. Nat. Hist., vol. 2, p. (573) 582, 1842 (type locality: Loodianah). -- BLEEKER, Verh. Batav. Genootsch. (Nal. Ich. Bengal. Hind.), vol. 25, p. 24, 1853 (copied).

Depth 13-1/3; head (beak ends broken) $2\frac{3}{4}$, width 8. Snout 1-4/5 in head, from end of frontal extension 3-1/5; eye 7 in head, 4 in snout, greater than interorbital; maxillary reaches 1-8 in eye, length from frontal extension 5 in head; interorbital 8, level, with broad median concave groove. No gill rakers; gill filaments 2-1/3 in eye.

Scales all fallen and pockets largely obliterated. Predorsal pockets 130 to occiput.

D. II, 14, fin height 7 in total head length; A. II, 15, fin height $6\frac{1}{2}$; least depth of caudal peduncle 1-1/3 in eye; caudal broken off; pectoral (damaged) about $\frac{1}{2}$ of postocular; ventral nearly long as eye, fin origin slightly nearer vertical edge of preopercle than caudal base.

Large dull brown (stained greenish). Pale narrow lateral axial streak, most distinct between dorsal and anal and width about $\frac{1}{4}$ of eye.

India, Ceylon, Burma, Siam, Borneo. My example in very poor preservation after many years in alcohol.

A. N. S. P., no. 7571. Ganges River, India. Dr. Marmaduke Burrough. Length 138 mm. (Caudal and beak broken).

Xenentodon canciloides (Bleeker)

Belone canciloides BLEEKER, Nat. Tijds. Nederland. Indië, vol. 5, p. (429) 454, 1853 (type locality: Pontianak; Pangaboeang, Borneo); Act. Soc. Sci. Ind. Néerland., no. 9, vol. 3, p. 7, 1857-58 (Palembang); (Achst. Sumat.), vol. 8, p. 55, 1859 (Telok-betong, Pangabuang, Palembang); (Sumatra), vol. 8, p. 2, 1860 (Lahat). -- WEBER, Zool. Ergebn. Reise Nederland. Oost. Indië, vol. 3, p. 456, 1895 (Borneo; Sumatra). -- VOLZ, Zool. Jahrb., Syst., vol. 19, p. 393, 1903 (1904) (Banakat); Revue Suisse, Zool., vol. 12, p. 472, 1904 (Sungei Mahe; Djapura; Indragiri; Wampu); Nat. Tijds. Nederland., Indië, vol. 66, p. 177, 1907 (Lampong, Palembang, Indragiri, Batu Bahra, Deli, Langkat). -- ELERA, Cat. Fauna Filip., vol. 1, p. 573, 1895 (Samar, Borongan).

Mastacembelus canciloides BLEEKER, Atlas Ichth. Ind. Néerland., vol. 6, p. 46, pl. 254 ( ), fig. 1 (Borneo; Sumatra).

Xenentodon canciloides REGAN, Ann. Mag. Nat. Hist., ser. 8, vol. 7, p. 332, 1911 (name). -- WEBER and BEAUFORT, Fishes Indo-Austral. Archipel., vol. 4, p. 133, fig. 50, fig. 51 (dentition) 4, p. 133, (Taluk and Djambi, Sumatra; Putus Sibau, Raun and Tepu, Borneo).

Belone cancila (not BUCHANAN-HAMILTON) MARTENS, Preuss. Exp. Ost-Asien, vol. 1, pp. 307, 400, 1876. (Danau Sriang, interior of Borneo). -- VAILLANT, Notes Leyden Mus., vol. 24, p. 31, 1902.

Depth 14 to 18, cylindrical; head 2-1/3 to 2-2/5. Eye 8-1/2 to 9 in snout, equals, or little less than interorbital, 2-1/2 to 3 in postorbital; 2/3 of maxillary hidden by preorbital; canines short, subulate, vertical; tongue smooth; mandible depth below pupil less than half of eye; upper surface of head with very deep median groove, tapering anteriorly and continued as narrow groove on beak.

Scales 200 to 220 in median lateral series; 21 scales above lateral line to dorsal origin. Opercle not scaly.

D. II, 15, first branched ray 4-1/3 in total head length; A. II, 15, first branched ray 4-1/2; least depth of caudal peduncle nearly equals eye; caudal slightly rounded, 5-1/5 in total head length; pectoral 5-1/3; ventral 1-1/2 to 1-2/3 in pectoral, inserted midway between preopercle and caudal base.

Brownish, more or less silvery below. Brownish lateral band, broader and silvery on tail. Fins hyaline, caudal dusky. Ventrals sometimes tipped with blackish. Length 275 mm. (Weber and Beaufort.)

East Indies.

BELONINAE, new subfamily

Gill rakers present. Jaws comparatively slender. Upper enlarged teeth moderate, lower small and close set. Belone.

Genus Belone Cuvier

Belone CUVIER, Regne Animal, vol. 2, p. 185, (Dec. 1816) 1817. (Type Esox belone LINNAEUS, monotypic.)

Belona LE SUEUR, Journ. Acad. Nat. Sci. Philadelphia, vol. 2, pt. 1, p. 124, 1821. (Type Esox belone LINNAEUS.)

Acus P. L. S. MULLER, Linn. Nat. Syst., vol. 4, p. 341, 1774. Atypic. (Type Esox belone LINNAEUS.) L. C., Supplement, p. 7 in register, 1776. (Inadmissible.)

Mastacembelus (not GRONOW 1763) KLEIN, Neuer Schauplatz, vol. 3, p. 271, 1776. (Type Esox belone LINNAEUS, designated by BLEEKER, Nederland. Tijdschr. Dierk., vol. 3, p. 214, 1866.) (Inadmissible.)

Raphistoma RAFINESQUE, Analyse de la nature, p. 19, 1815. (Type Esox belone LINNAEUS, as Raphistoma Rafinesque proposed to replace "Belone Gronow", which name not used by Gronow.)

Ramphistoma SWAINSON, Nat. Hist. Ahimals, vol. 2, p. 296, 1839. (Type Ramphistoma vulgaris SWAINSON = Esox belone LINNAEUS, monotypic.)

Petalichthys REGAN, Ann. Mag. Nat. Hist., ser. 7, vol. 4, p. 129, 1904. (Type Petalichthys capensis REGAN, monotypic.)

Eurycaulus (not FAIRMAIRE 1868) OGILBY, Proc. Roy. Soc. Queensland, vol. 21, p. 91, 1908. (Type Belone platyura BENNETT, orthotypic.)

Platybelone FOWLER, Proc. Acad. Nat. Sci. Philadelphia, 1919 (Jan.), p. 2. (Type Belone platyura BENNETT, orthotypic.)

Tropidocaulus OGILBY, Proc. Roy. Soc. Queensland, vol. 31, pt. 5, p. 45, Jan. 20, 1920. (Type Belone platyura BENNETT, to replace Eurycaulus Ogilby.)

Body greatly elongated, compressed to cylindrical. Caudal peduncle sometimes depressed. Head compressed, level above. Premaxillaries and mandible prolonged, forming long beak. Jaws with band of conic teeth and series of moderately large pointed wide set teeth, lower much smaller than upper, which are canine like. Teeth present or absent from vomer. Gill openings wide. Gill rakers moderate, lanceolate. Scales rather small. Lateral line low, not forming keel along caudal peduncle, which sometimes with keel above lateral line. Dorsal and anal nearly opposite, front branched rays highest and all rays joined with membranes. Caudal forked. Paired fins short.

Species few, in tropical seas. Petalichthys Regan seems to differ in no way from Belone as here understood.

Analysis of Species

a^1. Belone. Body compressed behind vent; without lateral keels.

b^1. Dorsal with 14 to 16 branched rays, anal 18 to 20. belone.

b^2. Dorsal with 12 branched rays, anal 13. capensis.

a^2. Platybelone. Body broadly depressed behind vent or at caudal peduncle; strong lateral keels present.

c^1. Dorsal with 11 or 12 branched rays, anal 15. platyura.

c^2. Dorsal with 15 or 16 branched rays, anal 22. natalensis.

Belone belone (Linnaeus)

Esox belone LINNAEUS, Syst. Nat., ed. 12, pt. 1, p. 517, 1766 (type locality: European Ocean). -- WALBAUM, Artedi. Pisc., vol. 3, p. 87, 1792 (copied). -- LACÉPÈDE, Hist. Nat. Poiss., vol. 5, pp. 295, 308, pl. 7, fig. 1, 1803 (all seas).

Belone belone FOWLER, Proc. Acad. Nat. Sci. Philadelphia, 1919, p. 2 (Mediterranean).

Belone acus RISSO, Hist. Nat. Eur. Mérid., vol. 3, p. 443, 1826 (type locality: Nice).

Belone vulgaris FLEMING, British Animals, p. 184, 1829 (type locality: British Isles).

Belone rostrata FABER, Fische Island, p. 152, 1829 (type locality: Iceland).

Hemiramphus europaens YARRELL, Mag. Nat. Hist., new ser., vol. 1, p. 505, fig. 63, 1837 (type locality: Ipswich; young).

Belone gracilis LOWE, Proc. Zool. Soc., London, 1839, p. 86 (type locality: Madeira).

Hemiramphus obtusus COUCH, Zoologist, 1848, p. 1978, figs. a-c (type locality: Mount's Bay).

Belone ll radiata BUDGE, Archiv. Anat. Phys. Wiss. Medicin, Müller, vol. 15, p. 383, pl. 12, figs. 9-10 (anatomy), 1848 (no locality).

Macrognathus scolopax GRAY, Cat. Fishes Gronow, p. 147, 1854 (type locality: all seas of Europe).

Belone linnéi MALM, Göteborgs och Bohusläns fauna, p. 553, 1877 (type locality: Göteborg).

Petalichthys capensis (not GÜNTHER 1866) REGAB, Ann. Mag. Nat. Hist., ser. 7, vol. 14, p. 129, 1904 (type locality: Port Elizabeth); ser. 8, vol. 7, 1911, p. 332 (name). -- THOMPSON, Marine Biol. Rep. South Africa, no. 3, p. 91, 1916. -- NORMAN, Ann. Mag. Nat. Hist., ser. 9, vol. 11, p. 320, 1922 (Natal). -- BARNARD, Ann. South African Mus., vol. 21, pt. 1, p. 255, fig. 15b (dorsal view of head), pl. 10, fig. 5, June 1925 (Table Bay, False Bay, Natal Coast).

Depth 16 to 18, 1-1/8 to 1-1/6 in postocular; head 3-1/8 to 3½ in body without caudal, width 7-1/8 to 7½. Snout 1½ to 1-3/5 in head from snout tip; end of frontal extension or suture to eye 4½ to 4¾ in rest of snout; eye 9 to 9½ in head from snout tip, 5¾ to 6 in snout, greater than interorbital, 2-1/8 to 2-1/3 in postocular; maxillary reaches 1/6 in eye, entirely concealed when closed; interorbital 2-1/5 to 2½ in postocular, level, with broad shallow depression medially behind. Gill rakers 4 or 5+ 24 to 26, lanceolate, 1½ in gill filaments, which ½ of eye.

Scales 200 to 270 in median lateral or axial series to caudal base; 120 to 153 predorsal scales to occiput, small and rounded on back. Smaller scales with 20 circuli, 10 or less in young; large lateral elongate scales with 30 to 50 close set circuli, becoming more or less incomplete with age.

D. II, 15 or II, 16, first branched ray 5¾ to 6 in total head length; A. II, 18 or II, 19, first branched ray 5¼ to 5½; caudal 3-1/8 to 3¼, forked, little less forked in young; least depth of caudal peduncle 1½ to 1-3/5 in eye; pectoral 4-1/5 to 4-1/3 in total head length; ventral 5½ to 6, origin slightly nearer caudal base than pectoral origin.

Brown above, side with broad ill-defined silvery band and below whitish. Sides of head and eyes silvery white. Fins pale or transparent, dorsal and caudal slightly dusted with brown.

Eastern Atlantic from Iceland, British Isles, Mediterranean, Madeira, South Africa to Natal.

I fail to distinguish Petalichthys capensis Regan from the common European gar fish Belone belone. It is described with 22 lower gill rakers and but 11 pectoral rays. This latter character recalls the imperfectly noticed Belone 11 radiata Budge. It was based apparently more on anatomical details, chiefly dental counts, rather than careful comparison with Belone belone.

A. N. S. P., no. 7575. Mediterranean. Dr. W. S. W. Ruschenberger. Length 375 mm.

A. N. S. P., nos. 7576 to 7583. Mediterranean. C. L. Bonaparte (333). Dr. T. B. Wilson. Length 230 to 407 mm.

Belone capensis (GÜNTHER)

Belone capensis GÜNTHER, Cat. Fish. Brit. Mus., vol. 6, p. 247, 1866 (type locality: Cape of Good Hope). -- BARNARD, Ann. South African Mus., vol. 21, pt. 1, p. 255, June 1925 (copied).

Tylosurus capensis THOMPSON, Marine Biol. Rep. South Africa, no. 3, p. 94, 1916 (reference).

Body broad, subcylindrical, free portion of tail compressed, deeper than broad; head 2-2/5. Eye less than interorbital, 3 in postorbital; base of premaxillaries depressed and maxillary 2/3 hidden by preorbital; teeth rather small, widely set, none on vomer; upper surface of head flat, with very shallow and broad median groove; superciliary region striated.

Scales of moderate size.

D. 14, middle and hinder rays subequal, short, last ending short distance from caudal base; A. 15, like dorsal, basal portion naked; caudal deeply emarginate; pectoral length more than distance of opercular margin from orbit; ventral rather small, nearly midway between eye and caudal. Length 330 mm. (GÜNTHER.)

Cape Seas.

Belone platyura Bennett

Belone platyura BENNETT, Proc. Comm. Zool. Soc. London, 1831, p. 168 (type locality: Mauritius). -- JORDAN and EVERMANN, Bull. U. S. Fish Comm., vol. 23, pt. 1, p. 122, fig. 38, 1903 (1905) Honolulu, Kailua, Samoa). -- JORDAN and SEALE, Bull. Bur. Fisher., vol. 25, p. 206, 1905 (1906) (Apia). -- KENDALL and GOLDSBOROUGH, Mem. Mus. Comp. Zool., vol. 26, p. 250, 1911 (Kambara, Fiji; Funafuti.)-- FOWLER, Proc. Acad. Nat. Sci. Philadelphia, 1919, p. 2 (Hawaiian Islands). -- RENDAHL, Nat. Hist. Juan Fernandez, Skottsberg, vol. 3, Zool. pt. 1, p. 66, 1921 (Easter Island). -- FOWLER, Copeia, no. 122, p. 82, Nov. 20, 1922 (Hawaii); Bull. Bishop Mus. 22, p. 6, 1925 (Guam); 26, p. 7, 1925 (Laysan, Lisiansky, Ocean Islands); 38, p. 7, 1927 (Christmas, Blake Islands, Honolulu); Mem. Bishop Mus., vol. 10, p. 71, 1928 (Honolulu, Faté, Rarotonga, Laysan, Palmyra, Funafuti, Society Islands, Apia, Kambara, Hawaii); vol. 11, no. 5, p. 319, 1931 (compiled); Proc. U. S. Nat. Mus., vol. 81, art. 8, p. 3, 1932 (Niuafoou Island, Tonga Group).

Belone (Eurycaulus) platyura WEBER and BEAUFORT, Fishes Indo-Austral. Archipelago, vol. 4, p. 118, 1922 (compiled).

Belone platura RÜPPELL, Neue Wirbelth., Fische, p. 73, pl. 20, fig. 1, 1835 (Massaua). -- VALENCIENNES, Hist. Nat. Poiss., vol. 18, p. 451, 1846 (copied). -- BLEEKER, Act.Soc. Sci. Ind. Néerland., vol. 2, no. 7, p. (7) 85, 1857 (Amboina). -- GÜNTHER, Cat. Fish. Brit. Mus., vol. 6, p. 237, 1866 (Red Sea; Amboina). -- KLUNZINGER, Verh. zool. bot. Ges. Wien, vol. 21, p. 577, 1871 (Red Sea). -- STREETS, Bull. U. S. Nat. Mus., no. 7, p. 75, 1877 (Honolulu). -- SAUVAGE, Hist. Nat. Madagascar, Poiss., p. 526, 1891 (reference). -- WAITE, Mem. Austral. Mus., no. 3, p. 194, 1897 (Funafuti). -- PELLEGRIN, Bull. Mus. Hist. Nat. Paris, vol. 4, 1898, p. 228 (Guam). -- STEINDACHNER, Denkschr. Akad. Wiss. Wien, Math.-Nat. Kl., vol. 70, p. 512, 1901 (Laysan). -- SNYDER, Bull. U. S. Fish Comm., vol. 22, p. 521, 1902 (1904) (Honolulu). -- SEALE, Occas. Pap. Bishop Mus., vol. 1, no. 15, p. 21, 1902 (Honolulu); vol. 4, no. 1, p. 12, 1906 (Faté, New Hebrides). -- JORDAN and SEALE, Bull. Bur. Fisher., vol. 25, p. 206, 1905 (1906) ( ). -- GÜNTHER, Journ. Mus. Godeffroy, vol. 8, pt. 16, p. 349, fig. (head), 1909 (Red Sea, East Indies, Pelau, Hawaii). -- REGAN, Ann. Mag. Nat. Hist., ser. 8, vol. 7, p. 332, 1911 (name).

Belone platurus BLEEKER, Naturk. Tijds. Nederland. Indië, vol. 22, p. 101, 1860 (Singapore).

Mastacembelus platurus BLEEKER, Atlas Ichth. Ind. Néerland., vol. 6, p. 50, pl. (11) 257, fig. 1, 1866 (Singapore; Amboina).

Hemiramphus platurus SEALE, Occas. Pap. Bishop Mus., vol. 4, no. 1, p. 13, 1906 (Rarotonga, Cook Islands).

Belone platyurus JENKINS, Bull. U. S. Fish Comm., vol. 22, p. 433, 1902 (1903) (Honolulu).

Esox bellone (not LINNAEUS) LICHTENSTEIN, Descript. Animal., Forster, p. 257, 1844 (Tanna).

Belone carinata VALENCIENNES, Hist. Nat. Poiss., vol. 18, p. 437, 1846 (type locality: Guayaquil to Hawaiian Islands). -- GÜNTHER, Cat. Fish. Brit. Mus., vol. 6, p. 236, 1866 (copied). -- SCHMELTZ, Cat. Mus. Godeffroy, no. 3, p. 11, 1866 (Pacific Ocean); no. 4, p. 25, 1869 (Pacific Ocean).

Belone depressa (not POEY) GÜNTHER, Cat. Fish. Brit. Mus., vol. 6, p. 235, 1866 (North West Australia; part). -- MACLEAY, Proc. Linn. Soc. New South Wales, ser. 2, vol. 5, p. 174, 1881 (on GÜNTHER). -- SAVILLE-KENT, Great Barrier Reef, pp. 299, 370, 1893 (Moreton Bay).

Tylosurus depressus MCCULLOCH, Austral. Mus. Mem., vol. 5, pt. 1, p. 100, June 29, 1929 (Queensland ?; North West Australia).

Belone persimilis GÜNTHER, Journ. Mus. Godeffroy, vol. 16, pt. 8, p. 349, fig. (head), 1909, (type locality: Hawaii; Tonga; Yap; Northwest Australia).

Belone (Eurycaulus) persimilis WEBER and BEAUFORT, Fishes Indo-Austral. Archipelago, vol. 4, p. 118, fig. 46, 1922 (Flores).

Platybelone dorsalis WHITLEY, Rec. Austral. Mus., vol. 18, no. 6, p. 335, April 20, 1932 (type locality: Northwest Australia: on Günther).

Depth 18 to 19-4/5, body rather broad, cylindrical, more depressed behind or on caudal peduncle so width is greater than depth behind dorsal origin; head from snout tip 2-5/6 to 2-9/10, width $6\frac{1}{4}$ to 7. End of frontal point to eye $4\frac{1}{2}$ to 5 in rest of snout, wide as long; eye $1\frac{3}{4}$ to 1-8/8 in postocular; maxillary reaches front eye edge; interorbital $1\frac{3}{4}$ to 2 in postocular, level, broad shallow depression medially; bones on top of head rather obscurely striate. Gill rakers IV or V, 3+6, XII or 5, X, short points, $2\frac{1}{2}$ in gill filaments, which 1/3 of eye.

Scales 175? to 196 in median axial lateral series to caudal base; predorsal 95 to 103 forward to head; 9 rows on cheek. Scales with 34 to 54 close set circuli, complete (likely incomplete with age).

D. II, 11 to II, 13, first branched ray 5-4/5 to 6 in head from snout tip; A. II, 15 to II, 17, first branched ray $5\frac{1}{4}$ to 5-2/5; least depth of caudal peduncle $\frac{1}{2}$ its width or $2\frac{3}{4}$ to 3-1/5 in eye; pectoral $4\frac{1}{2}$ to 5 in head from snout tip; ventral 7 to $7\frac{3}{4}$, $1\frac{1}{4}$ to 1-2/5 in postocular.

Brownish to gray or olive above or on back, sides and under surfaces. Iris white. Fins pale, darker terminally.

Red Sea, Mauritius, Malaya, East Indies, Philippines, North West Australia, Queensland, Melanesia, Micronesia, Polynesia, Hawaii, Easter Island.

Whitley has named Günther's Northwest Australian specimen Platybelone dorsalis, chiefly on the distinction of but 16 dorsal rays. If allowance is made for the first 2 rays as simple or unbranched, the formula would be D. II, 14. As this is only one ray more than I have found in my materials I can hardly believe it of specific importance.

One example. Anchorage, Toumindao Island. February 25, 1908. Length 47 mm (broken).

One example. Shore above Iloilo River. June 2, 1908. Length 80 mm.

Two examples. Sandakan, Borneo. February 29, 1908. Length 43 to 44 mm. Two examples.

Three examples. Sandakan, Borneo. March 1, 1908. Length 47 to 50 mm. Three examples.

U. S. N. M. no. 17983. Honolulu. Dr. T. H. Street. Length 380 to 402 mm. Three examples.

U. S. N. M. no. 51063. Hawaiian Islands. Bureau of Fisheries (04993). Length 333 mm.

U. S. N. M. no. 52527. Apia, Samoa. Bureau of Fisheries (025471). Length 326 mm.

U. S. N. M. no. 52699. Hawaiian Islands. Bureau of Fisheries (04994). Length 376 mm. As Tylosurus giganteus.

U. S. N. M. no. 65763. Kambara, Fiji. Albatross Collection (A136). Length 313 to 384 mm. Three examples.

U. S. N. M. no. 92251. Hawaiian Islands. July 1930. Length 464 mm.

A. N. S. P. nos. 7573 and 7574 Hawaiian Islands. Dr. J. K. Townsend Length 400 to 439 mm. These two examples among the first of the species obtained in the Hawaiian Islands, several years before Valenciennes described it as Belone carinata.

Belone natalensis Günther

Belone natalensis GÜNTHER, Cat. Fish. Brit. Mus., vol. 6, p. 243, 1866 (type locality: Port Natal). -- SAUVAGE, Hist. Nat. Madagascar, Poiss., p. 526, 1891 (reference). -- GILCHRIST, Marine Investig. South Africa, p. 152, 1901 (reference). -- BARNARD, Ann. South African Mus., vol. 21, p5. 1, p. 254, June 1925 (Natal).

Tylosurus natalensis GILCHRIST and THOMPSON, Ann. Durban Mus., vol. 1, pt. 4, p. 310, 1917 (compiled)

Body compressed, depth less than pectoral fin; free portion of tail not compressed, subtrihedral, back of tail broad and depressed; head nearly 3. Eye less than interorbital, 2-2/3 in postorbital; base of premaxillaries depressed and maxillaries 2/3 hidden by preorbital; teeth moderate, none on vomer or tongue; upper surface of head with wide, shallow median groove, tapering behind, widening in front; superciliary region faintly striated.

Scales thin, rather small, adherent.

D. 17 or 18, middle and hinder rays subequal, short, last ending as considerable distance from caudal base; A. 24, like dorsal; caudal truncate; pectoral greater than distance of opercular margin from orbit; ventral nearly midway between caudal base and front eye edge. Length 512 mm.

(Günther.)

Natal Coast.

Family SCOMBERESOCIDAE

Body elongate compressed. Head with both maws more or less prolonged, forming slender beak, upper jaw always longer. Eye nearly median, high. Teeth weak, pointed. Maxillary and premaxillary firmly joined. Gill rakers slender, numerous, long. Pharyngeal bones with fourth upper on each side absent or fused with third, which greatly enlarged, distinct from its fellow and covered with tricuspid teeth; second with simple teeth; first toothless; lower ones united, form triangular bone with concave surface, covered with tricuspid teeth. Scales very small, thin deciduous, with suggestion of mackerel. Dorsal and anal low, alike, each followed by 4 to 6 detached finlets. Paired fins small.

A small group of pelagic fishes, usually found in large schools swimming near or at the surface in temperate seas.

Analysis of Genera

a^1. Beak short, upper jaw of adult not extended and lower jaw with only short, flexible tip. Cololabis.

a^2. Beak long, both jaws extended and slender. Scomberesox.

Genus Cololabis Gill

Cololabis GILL, Proc. U. S. Nat. Mus., vol. 18, p. 176, 1895.

(Type, Scombresox brevirostris PETERS, orthotypic.)

Jaws extended into a short beak, only half length of rest of head. Greatly like Scombresox and differing only in the short beak.

Cololabis saira (Brevoort)

Scomberescox saira BREVOORT, Narrat. Exped. China-Japan, Perry, p. 281, pl. 7, fig. 4, 1856 (type locality: Simoda, Japan).

Scombresox saira ISHIKAWA and MATSUURA, Prelim. Cat. Fish. Mus. Tokyo, p. 18, 1897 (reference).

Cololabis saira JORDAN and SNYDER, Annot. Zool. Japon., vol. 3, p. 60, 1901 (reference). -- JORDAN and STARKS, Proc. U. S. Nat. Mus., vol. 26, p. 537, 1903 (Awa, Otaru, Aomori, Hakodate). -- FRANZ, Abh. Akad. Wiss. München, vol. 4, Suppl. band 1, p. 24, 1911 (Yokohama, Aburatsubo, Todohokkei). -- TANAKA, Fig. Descr. Fishes Japan, vol. 5-10, p. , pl. 12, 1912. -- IZUKA and MATSUURA, Cat. Zool. Spec. Tokyo Mus. Vertebr., p. 165, 1920 (Tokyo). -- SCHMIDT, Trans. Pac. Comm. Acad. Sci. U. S. S. R., p. 36, 1931 (Nagasaki). -- ANONYMOUS, Ill. Jap. Aquat. Plants Anim., vol. 1, pl. 21, fig. 2, 1931.

Scombresox brevirostris PETERS, Monatsb. Akad. Wiss. Berlin, 1866, p. 521 (type locality: Tomales Bay, California).

Cololabis brevirostris JORDAN and EVERMANN, Bull. U. S. Nat. Mus., no. 47, pt. 1, p. 726, 1896 (California). -- FOWLER, Proc. Acad. Nat. Sci. Philadelphia, vol. 75, 1923, p. 287 (Venice, California), p. 296 (La Jolla, California).

Scombresox saurus (not WALBAUM) NYSTRÖM, Bihong Kong. Svenske Vet. Akad. Handl., Stockholm, vol. 13, no. 4, p. 41, 1887 (Nagasaki).

Depth 7½ to 9; head 4-1/10 to 4-2/5, width 3-2/3 to 4. Snout 2-2/3 to 3 in head from snout tip; eye 5¾ to 7, 2 to 2¾ in snout, 1 to 1¼ in interorbital; maxillary reaches 1½ to eye, length 3-2/3 to 4-1/8 in head from snout tip; lower jaw extends but very slightly forward of upper jaw, length to eye 2½ to 2-3/5 in total head; interorbital 5¼ to 6½ in head, moderately high, depressed medially. Gill rakers 8 40, upper and lowest 2 rudimentary, others lanceolate and 1-1/5 in eye.

Scales 100 to 109 in median lateral series axially to caudal base; 15 or 16 above lateral line to dorsal origin, 98 to 100 predorsal of which 76 to 78 forward from dorsal to occiput or opposite bind pre-opercle edge. Scales caducous, often largely fallen in preserved examples. Scales with 0 to 1 basal radiating stria; circuli fine 70 to 75, incomplete apically.

D. II, 9 or II, 10 5 or 6, first branched ray 3-7/8 to 4¾ in total head length; A. II, 11 or 12—6, first branched ray 4¾ to 5-2/5; caudal 1¾ to 2¼; least depth of caudal peduncle 8-2/5 to 9; pectoral 2-2/5 to 2-5/8; ventral 3-1/5 to 3¼.

Back brown, sides and below silvery white, line of demarcation high on side. Iris silvery white. Dorsal and caudal pale brown, other fins still paler.

Japan, California. A comparison with the California example listed below fails to show any differences.

U. S. N. M., no. 27209. California. D. S. Jordan. Length 350? mm (caudal broken). As Scombresox brevirostris.

U. S. N. M., no. 44926. Japan. Government of Japan. Length 298 to 320 mm. 3 examples.

U. S. N. M., no. 50744. Otaru, Hokkaido. D. S. Jordan and J. O. Snyder. Length 114 to 135 mm. 8 examples.

Genus Scomberesox Lacépède

Scomberesox LACÉPÈDE, Hist. Nat. Poiss., vol. 5, p. 344, 1803. (Type Scomberesox camperi LACÉPÈDE, monotypic.)

Scombresox DUMÉRIL, Zool. Analyt., p. (148) 342, 1806. (Type Scomberesox camperi LACÉPÈDE.)

Sayris RAFINESQUE, Carrat. Animal. Sicil., p. 60, 1810. (Type Sayris recurvirostra RAFINESQUE Esox saurus WALBAUM, designated by JORDAN and EVERMANN, Genera of Fishes, pt. 1, p. 81, 1917.)

Grammiconotus COSTA, Annuario Mus. Zool. Napoli, vol. 1, p. 55, 1862. (Type Grammiconotus bicolor COSTA, monotypic.)

Body long. Both jaws extended into very slender pointed beak, in adult longer than rest of head. Young with short jaws, lengthen into beak with age. Air-bladder large.

Species few.

Scomberesox forsteri (Valenciennes)

Scombresox forsteri VALENCIENNES, Hist. Nat. Poiss., vol. 18, p. 481, 1846 (type locality: New Zealand). -- GÜNTHER, Cat. Fish. Brit. Mus., vol. 6, p. 258, 1866 (New Zealand). -- HUTTON, Fishes New Zealand, p. 53, 187 . -- CASTELNAU, Rec. London Intern. Exhib., pt. 7, no. 5, 1873, p. 16 (Victoria). -- MACLEAY, Proc. Linn. Soc. New South Wales, vol. 5, pt. 2, p. 180, 1881 (Melbourne and Sydney). -- OGILBY, Handbook of Sydney, p. 124, 1898. -- JORDAN and SNYDER, Annot. Zool. Japon., vol. 3, p. 61, 1901 (reference). -- STEAD, Fishes of Australia, p. 64, 1906, -- MCCULLOCH, Biol. Res. Endeavour, p. 30, 1909-10 (120 miles southwest of St. Francis Island, South Australia).

Scomberesox forsteri MCCULLOCH, Austral. Mus. Mem., no. 5, pt. 1, p. 99, June 29, 1929 (New South Wales, Victoria, South Australia, Tasmania, New Zealand).

Esox saurus (not WALBAUM) LICHTENSTEIN, Descript. Animal., p. 143, 1844.

Depth $9\frac{1}{4}$; head 3-1/3, width $5\frac{1}{2}$. Snout 1-2/3 in head from snout tip; eye 9-4/5, 6 in snout, 1-1/3 in interorbital; beak not completely closing basally, lower jaw little longer; maxillary reaches 7/8 in snout, length from snout tip 1-7/8 in head from snout tip; interorbital 8-1/5, low, broadly convex. Gill rakers 6+40, upper or ceratobranchial rudimentary, others lanceolate or $1\frac{3}{4}$ in eye.

Scales 90? (pockets) in median lateral or axial series; 14? above lateral line to dorsal origin, 104 predorsal of which 76 forward opposite upper hind preopercle edge. Scales all fallen.

D. II, 8—5, first branched ray 6-1/8 in total head length; A. II, 10—6, first branched ray 7; caudal $2\frac{1}{2}$; least depth of caudal peduncle 11-5/8; pectoral $4\frac{1}{2}$; ventral 5-1/3.

Back brown, sides paler, evidently silvery in life though now stained darker. Iris grayish. Fins brownish.

South Australia, Victoria, New South Wales, Tasmania, New Zealand.

U. S. N. M., no. 59928. Port Jackson. D. G. Stead. Length 335 mm.

Scomberesox saurus (Walbaum)

Esox saurus WALBAUM, Artedi Pisc., vol. 3, p. 73, 1792 (type locality: Cornwall, England; on Saury pike PENNANT, British Zool., vol. 3, p. 325, 17). --SCHNEIDER, Syst. Ichth. Bloch, p. 394, 1801 (Cornwall; Mediterranean).

Scombresox saurus BLEEKER, Nat. Tijds. Nederland. Indië, vol. 21, p. 56, 1860 (Cape of Good Hope). -- GÜNTHER, Cat. Fish. Brit. Mus., vol. 6, p. 257, 1866 (Cape of Good Hope). -- GILCHRIST, Marine Investig. South Africa, p. 152, 1901 (name). -- LEMPE, Deutsch. Südpolar Exped., Fische, vol. 15, p. 205, 1914 (between Cape of Good Hope and Kerguelen). -- BARNARD, Ann. South Afric. Mus., vol. 21, pt. 1, p. 259, fig. 16 (heads), June 1925 (St. Helena Bay, Table Bay and Cape Point to Mossel Bay).

Scomberesox saurus BORODIN, Bull. Vanderbilt Marine Mus., vol. 1, art. 2, p. 46, 1930 (Red Sea).

Scomberesox camperii LACÊPÊDE, Hist. Nat. Poiss., vol. 5, pp. 344, 345, pl. 6, fig. 3, 1803 (type locality: no locality).

Sayris serrata RAFINESQUE, Carrat. Animal. Sicil., p. 61, 1810 (type locality: Sicily).

Sayris recurvirostra RAFINESQUE, Carrat. Animal. Sicil., p. 61, 1810 (type locality: Sicily).

Sayris hians RAFINESQUE, Carrat. Animal. Sicil., p. 61, pl. 9, fig. 1, 1810 (type locality: Sicily).

Sayris bimaculatus RAFINESQUE, Carrat. Animal. Sicil., p. 62, 1810 (type locality: Sicily).

Sayris serratus RAFINESQUE, Carrat. Animal. Sicil., p. 62, 1810 (on RONDELET).

Scomberesox storeri DEKAY, New York Fauna, vol. 3, p. 229, pl. 35, fig. 3, 1842 (type locality: Newfoundland Banks; Massachusetts; New York).

Grammiconotus COSTA, Annuario Mus. Zool. Napoli, vol. 1, p. 55, pl. 1, fig. 4, 1862 (type locality: Naples).

Depth $8\frac{1}{2}$ to $9\frac{1}{2}$ (young); head 3-4/5 to $4\frac{1}{4}$, width 5 to 6. Snout 1-3/5 to $2\frac{1}{4}$ in head from snout tip; eye 4 to 9, 1-2/3 to 5-2/5 in snout, greater than interorbital in young to $1\frac{1}{4}$ or subequal with age; beak not completely closing basally, short in young, much longer with age and lower jaw longer; maxillary reaches $\frac{1}{2}$ to eye in young, 4/5 with age, length from snout tip 1-9/10 to $2\frac{1}{4}$ in head from snout tip; interorbital subequal with age, low, nearly level. Gill rakers 9+41, upper or ceratobranchial rudimentary, others lanceolate or 1-3/5 in age.

Scales 115 to 120 in medial lateral series axially to caudal base; 14 or 15 above lateral line to dorsal origin, 100 to 103 predorsal or 70 to 73 forward from dorsal to occiput or opposite hind vertical edge of preopercle. Scales very caducous, most all fallen. Scales with 0 or 1 short basal radiating striae; circuli 16 to 70, not extended apically.

D. II, 8 or II, 9—5 or 6, first branched ray 5 to $5\frac{1}{4}$ in total head length; A. II, 10 or II, 11—6 or 7, first branched ray 6 to $6\frac{1}{2}$; caudal 2 to 2-4/5; least depth of caudal peduncle $10\frac{3}{4}$ to $11\frac{1}{2}$; pectoral 4 to 4-7/8; ventral 4-1/5 to 4-9/10.

Back drab brown, sides and below silvery white, line of demarcation high on side. Iris silvery white. Dorsal and caudal pale brown, other fins still paler or whitish.

Atlantic Ocean, Mediterranean, southern Indian Ocean. Reported from the Red Sea by Borodin.

U. S. N. M., no. 13164. Cape Cod, Massachusetts. E. G. Blackford. Length 270 mm.

U. S. N. M., no. 13165. Cape Cod, Massachusetts. E. G. Blackford. Length 280 to 310 mm.

U. S. N. M., no. 19852. Wood's Hall, Massachusetts. V. N. Edwards. Length 260 290 mm. 4 examples.

U. S. N. M., no. 19853. Wood's Hall. V. N. Edwards. Length 265 to 274 mm. 3 examples.

U. S. N. M., no. 20751. Newport, Rhode Island. Samuel Powell. Length 241 to 278 mm. 2 examples.

U. S. N. M., no. 22385. Halifax, Nova Scotia?. J. M. Jones. Length 373 mm.

U. S. N. M., no. 23770. Massachusetts. U. S. Fish. Comm. Length 240? mm.

U. S. N. M., no. 23917. Lat. 44°3'N., long. 58°26'W. G. H. Johnson. Length 373 mm.

U. S. N. M., no. 24727 to 24728. Massachusetts. U. S. Fish Comm. Length 273 to 278 mm. 2 examples.

U. S. N. M., no. 28615 and 28616. Grand Bank. Gloucester Donation. Length 280? to 283? mm. 2 examples.

U. S. N. M., no. 31826. Fifty miles south of Gay Head, Massachusetts. Collins. Length 310? mm.

U. S. N. M., no. 38747. St. Thomas, West Indies. A. K. Ruse. Length 72 mm.

U. S. N. M., no. 40050. Naples. Florence Museum. Length 255 mm.

U. S. N. M., no. 48453. Italy. S. E. Meek. Length 185 to 195 mm. 2 examples.

U. S. N. M., 1 example. Mouth of Bay of Chaleus, Gulf of St. Lawrence. P. A. Taverner. Length 347 mm.

Exocoetoidea